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# Chicago Medical Journal.

J. ADAMS ALLEN, M.D., LL.D., WALTER HAY, M.D.,

EDITORS.

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*Medicine, Surgery and the Collateral Sciences.*

EDITED BY J. ADAMS ALLEN, M.D., LL.D.: AND WALTER HAY, M.D.

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## Original Communications.

ARTICLE I.

### THE MEDICAL EXPERT AND MEDICAL EVIDENCE.

BY M. A. McCLELLAND, M.D., KNOXVILLE, ILL.

(Concluded from page 171.)

#### WILLS.

Quite frequently the physician is called upon to write a will, and a discussion of the principles upon which these documents are based, will not be out of place in this connection.

The first great duty the physician must observe, is to ascertain the bodily and mental condition of the testator. "Less mind," it has been decided, (*Nichols* v. *Nichols*, 31 Vt. 331), "is ordinarily requisite to make a will, than a contract for sale," for the reason, "that in contracts of sale there are usually two parties, and some degree of antagonism between their interests and efforts;" while in making a will "one is left free to act upon his own perceptions merely."

"An understanding of the business about which the testator was engaged, of the kind and value of the property devised, and of the persons who were the natural objects of his bounty, and of the manner in which he wished to dispose of his property, are all the evidence, it has been ruled in Illinois, of the possession of testamentary capacity, unless the testator was affected with some morbid or insane delusion as to some one of those natural objects of his bounty." (W. & S. Med. Jurisp., §§ 19, 31.) If this unsoundness arises "from want of intelligence occasioned by defective organization, or by supervening physical infirmity, or the decay of advancing age, as distinguished from mental derangement," it alike incapacitates.

Mental soundness being presumed, the person writing the will is to limit himself to such inquiries as may enable him to understand the testator's wishes. These wishes he is to write down in the fewest, simplest and clearest words. The document is to have the name of the *place* where executed, with *exact* date of the transaction, and at the foot of the writing the signature of the testator, if possible, in his own handwriting.

The foregoing indications of "mental capacity" are given to guide the physician in respect to the propriety of drafting the will. When the document comes to be contested in court, the physician can be required to testify as to all the facts in the case, and he may give his opinion on "mental capacity" from facts observed by himself, but a physician not personally acquainted with the facts, must give his testimony on a hypothetical case, and is to express no opinion till he also knows the contents of the "will" in question. Even if the physician has observed the facts himself, unless he can state the grounds of his opinions, they are no better than surmises. Unless he is well informed upon these matters, he had better restrict himself to the functions of an ordinary witness, refusing to pass upon the question in issue on the ground of want of special study. By this course

he will reflect honor upon himself and will assist in confirming popular confidence in the decisions of the law.

UNNECESSARY VISITS.

"Physicians are frequently charged with making unnecessary visits, and their bills are often paid very grudgingly, indeed, they may be able to collect them only by law. The investigation of such a case as this is a very difficult one, and the physician is to remember when called upon to testify in such a case, that the physician in attendance is the one properly to judge in these matters, each case being a law unto itself, and the responsibilities are his. The files of prescriptions, proving positive treatment of the disease said to have been diagnosed, would go far to prove the visits were necessary."

APHORISMS.

Any injury to the health or any death proved to have occurred subsequent to medical treatment, is to be imputed to the physician, when his treatment has been quite different from what is taught orally and in books, by his acknowledged scientific compeers, as the proper treatment, according to the rules of art, for such a case or one similar to it, and which is universally acknowledged by the medical experience of his compeers to be correct. (Caspar.)

"Life," in legal parlance, is equivalent to "respiration,"—not to have breathed is not to have lived. Therefore, to the question whether in a given case the fœtus *in utero* did not live, it should be replied that only life dependent upon *respiration* can be proved. (Caspar.)

"It is the right and duty of the forensic physician to give his testimony not only in accordance with the letter but also with the spirit of the law."

"In questions of legal responsibility, let the judge

put special questions to the medical witness, referring to the individual case." (Bocker.)

"In respect to conditions upon which insanity depends, in by far the larger number of cases, *post mortem* examinations reveal some material changes. And if that material change is not noted, it should not be confidently asserted that no such change has taken place, but rather ascribe it to the inability of the observer, or to the want of those accessories of investigation that are necessary."

"A forensic physician, in a psychological case, has or may have two distinct functions, viz.: First, to determine how far a case of mental alienation is dependent upon bodily disease; and, second, to ascertain whether mental alienation is really present. To those who believe that there may be mental without physical disease, this proposition will be objectionable."

"Medical skill is not, in many instances, and without reference to the particular circumstances of the case, decisive as to the cause of death; and persons of science must, in order to form their own conclusions and opinions, rely partly on external circumstances." (Roscoe's Crim. Ev.)

*Experts.*—There is no established form for questions to experts. * * Any question may be proper which will elicit their opinions as to matters of science or skill, which are in controversy, and at the same time exclude their opinion as to the effect of the evidence in establishing controverted facts. (*Hunt* v. *Gaslight Co.*, 8 Allen.)

It is not admissible to permit a medical witness to give an opinion in a case where he has no means of ascertaining the facts in respect to which his opinion is asked. (*Millard* v. *Brown*, 35 N. Y.)

The opinion of an expert must be predicated on facts proved or admitted, or such as appear in evidence hypothetically stated. One not an expert must give facts, and

circumstances within his own knowledge as the ground of his opinion. (*Roach* v. *Zehring*, 59 Pa.)

"The rules prescribing the qualifications of experts are established by law; but whether a witness offered as an expert has the legal qualifications which entitle him to testify in that capacity, is a question of fact to be decided by the court, in the exercise of its discretion, at the trial of the cause; and the decision of the presiding judge, in such a case, is not subject to exception or revision." (*Dole* v. *Johnson*, 50 N. H.; *Taylor* v. *Roger Williams Ins. Co.*, 50 or 51 N. H.)

"A physician, as a witness, cannot be allowed to express his professional opinion as necessarily to imply his belief of material facts outside of his art or profession, and not within his own knowledge, and which are not in their nature subject matter of mere opinion." (*Moore* v. *State of Ohio*, 17 O. S. R. 521; *McCurry* v. *Hooper*, 12 Ala. 823.)

"A physician cannot give an opinion as to whether another physician had acted honorably and faithfully; nor can he give an opinion on the opinion of another expert." (*Campbell* v. *Richards*, 5 B. & Adolph. 840; *Ramadge* v. *Ryan*, 9 Bingh. 333; *Heath* v. *Wing*, 45 Maine, 392; *Weatherbee's Executors* v. *Weatherbee's Heirs*, 38 Vt. 454.)

"A medical witness may, when the issue is sanity or insanity, be asked whether such and such symptoms proved by other witnesses, are, in his judgment, *symptoms* of insanity; but he cannot be asked if the act with which the defendant is charged is an insane act, for this is a fact to be decided by the jury." (*Rex* v. *Wright*, R. & R. 456; *Rex* v. *Searle*, 1 M. & Bab. 75; *Collet* v. *Collet*, 1 Curtis, 687; *Malton* v. *Nesbit*, 1 C. & P. 72.)

"It is not proper to inquire of a medical witness whether the person in question possessed sufficient capacity to transact business or to make a will." (*White* v. *Bailey*, 10 Mich. 155.)

"Special knowledge must be fully established before a witness can be examined as an expert." (*Sinclair* v. *Roush*, 14 Ind. 450; *Winans* v. *N. Y. & E. R. R. Co.*, 21 Howard U. S. 88; *Com.* v. *Wilson*, 1 Gray, 337; *Daniels* v. *Mosher*, 2 Mich. 183; *Lester* v. *Pittsfield*, 7 Vt. 161; *Mendum* v. *Com.*, 6 Rand. 704; *Elfelt* v. *Smith* 1 Minn. 125.)

"Experts may be asked as to hypothetical facts, but not as to conclusions of law.

"They may also be examined as to conclusions of science drawn from particular experiments. But not as to their opinions on matters not of their particular science.

"Examinations made *ex parte*, when there could have been notice to the opposite side, are inadmissible. But investigations by persons having intimate and continuous opportunities of examination are not excluded because *ex parte*, when these investigations would not be enhanced in accuracy and authoritativeness by being preceded by notice to the opposite side." (Wharton & Stille, §§ 1243—1247.

CONCLUSION.

It will be seen from the foregoing citations, that what with the adverse rulings of the courts as to what questions may and what may not be answered by the expert; with the case complicated by questions upon hypothetical statements of fact, so framed as to bring out the answer most favorable to the side propounding them; with the notable difference or seeming difference of opinion among medical witnesses themselves; that the "expert's" position is not a very enviable one, and that there is an urgent necessity for so modifying the laws bearing upon this kind of testimony, that the "*best*" may be had in every case.

To the plans proposed by Professor Washburn and others, already cited, I do not know how I can serve the profession better than by transcribing in full § 1250 of Wharton & Stille's Medical Jurisprudence, bearing upon the same subject.

In the medico-legal system in force in Germany, there is first a county or city physician, who has been scientifically trained in medicine, surgery and obstetrics. In addition to this, he is to prepare himself and be examined in the specialty of medical jurisprudence, which examination is to be conducted by the supreme medical board of the State. Associated with the city or county physician, there is a city or county surgeon. These may differ in opinion, in which case there is an appeal taken to the medical tribunal of the province (State); finally, an appellate court medical for the whole monarchy. Messrs. Wharton & Stille, after developing the above principles, go on to state, § 1250:

"A similar system could be readily grafted on our American practice. We are familiar with army physicians and army surgeons, and of subordination in rank in these officers. There would be no difficulty in providing in each county for a county physician, who by tests of an adequate competitive examination, shall show his general and special competency for this particular post. In addition to the duties devolved on him of conducting post mortem examinations, and of pursuing any other investigations that may be required in a litigated issue, such a physician might be made the arbiter in those moot questions by which the law has been kept in a state of such distressing incertitude. Is there such a disease as moral insanity or as *mania transitoria?* Can human blood stains be distinguished after having become dried? If a question of this kind arise on the trial of a cause, it would not be inconsistent with the analogies of the law to refer it to an official expert, just in the same way that a chancellor sends a question of fact to be determined by a master in chancery or by a common law court and jury. But if this be done, it should be done with the checks that attend the chancery system which has just been noticed. The official physician who acts as referee must be placed under judicial restraints. He should owe his appointment to neither party, but to the

State, irrespective of any particular case. His duty it should be to take testimony, if needed, on the case, and to hear counsel, so that he will be in no danger of hazarding one of those rash and ignorant opinions which have so much disgraced this branch of medical practice. After thus judicially hearing the case, it should be his further duty to judicially certify his opinion to the court by whom the reference is made. In proper cases there might be allowed an appeal from such opinions to a supreme court of governmental experts appointed by the State at large.

"It may be said that this may be productive of occasional delay. This is true; but the difficulties thus arising would not be so great as those which almost every contested medical issue now involves, and which in cases of insanity, have led courts so often to grant new trials from sheer despair of drawing a decisive conclusion from the jargon thus introduced. Soon, also, the delay of appeals would be reduced; for certain great cardinal questions would be settled beyond dispute. We should soon know whether there is such a thing as moral insanity, and whether it is practical to distinguish human blood after the expiration of a week from the period of its drying. Settle a few of such points as these, and we relieve criminal justice of a large part of the uncertainties by which it is now beset, and we will have a series of rules, by which cases can be intelligently, consistently and humanely conducted. Nor will this be all. We will be able to get the judicial utterances of science as to vexed issues of fact, instead of the interested arguments of experts, who are virtually employed as counsel by the party calling them, or the wild utterances of philosophic monomaniacs who are called simply because of their absorption in some unique theory of their special concoction. Such men need not be silenced. Experts as counsel, indeed, will find a proper and important office in presenting the two sides of the issue to the expert who acts as referee. But the expert who fills this last judicial

post will be disembarrassed of all personal relations. He will have no client to serve and no past partizan extravagances to vindicate. He will render his opinion as the advocate neither of another nor of himself. When he speaks, he will do so judicially, as the representative of the sense of the special branch of science which the case invokes, governed by the opinion of the great body of scientists in this relation, and advised of the most recent investigations. When this is done, we will have expert evidence rescued from the disrepute into which it has fallen, and invested with its true rights as the expression of the particular branch of science for which it speaks."

A last rule for the government of the medical expert is this: Do not be too free in the expression of opinions off the witness stand. Time and again physicians are subpœnaed as witnesses, and their knowledge used by counsel in the management of the case, after which they are not called upon the stand and receive no fee for their attendance beyond the ordinary witness fee. Require for such opinions the same remuneration you would upon the stand. Give no opinion till such fee is paid.

The above is deduced from some personal experience which it may not be out of place to relate in this connection.

In the case of the *People* v. *Swanson*, alleged murder by poisoning, taken by change of venue from Knox to Warren Co., State of Illinois, the attorneys for defendant availed themselves of my library in preparing themselves for the trial. My knowledge of those matters was also solicited, under an express agreement that I would not be subpœnaed in the case. Under such conditions I rendered what aid I could, as the attorney who availed himself of my courtesy was a personal friend. My surprise was very great, at a visit from the sheriff, just before the sitting of the court, with a notice to appear and testify as to what I knew in the case. This invita-

tion I did not feel at liberty to refuse. During the progress of the case both myself and the chemical expert for the defense were consulted frequently in respect to certain testimony given for the people, and when it was learned that we both coincided with the opinions of these witnesses, I was excused from further attendance, and I believe also the chemical expert. For the attendance of the better part of two weeks, a witness fee of some ten or twelve dollars was subsequently paid me by the people.

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ARTICLE II.

# SYPHILIS: ITS MATERIALS AND FORCES;

WHAT THEY ARE, WHAT THEY DO, AND HOW THEY DO IT, IN THE PRODUCTION OF THE PHENOMENA CALLED SYPHILITIC IN LIVING HUMAN BODIES; AND OUTLINES OF ITS CLINICAL MANAGEMENT.

BY Z. COLLINS McELROY, M.D, ZANESVILLE, O.

(From the Proceedings of the Zanesville Academy of Medicine, Zanesville, O., March 11, 1875.)

My first acquaintance with syphilis was in the "Venereal Wards" of the "Pennsylvania" and "Blockley" Hospitals in Philadelphia, and dates back nearly thirty years. I had heard before commencing the study of medicine, of the "bad disorder," with its "blue bores" in the groins, sore throat, and skin eruptions, and I had read in the newspapers the "important announcement" of "Drs. Humberg & Son," who ran "Lock Hospitals" in several large cities for the "cure" of the "afflicted" in "that" and other "ways."

But in the "Blockley," as a medical student, I was brought face to face with it; examined the sores, fungous growths, eruptions on the skin, etc., etc., of the patients there; heard the "clinical lectures" on the subject; watched the treatment; read "Hunter on the Venereal," "Ricord," and "Vidal," and, later, "Bumstead"; studied "Cullerier's" atlas; and carefully read the contributions to the medical press during my time, down to "Hutchinson" and "Drysdale"; and during my professional career have had some cases to manage, and have had many opportunities to study it, which were not neglected. I was most thoroughly taught, and as thoroughly believed, that "syphilis" was a veritable "disease," and no mistake.

There came a time, however, in my professional life, when the whole subject of "diseases" was overhauled, resulting in some important modifications of my creed in regard to sickness, which, of course, included syphilis.

In regard to it, I faced the alternative of becoming a skeptic, and rejecting much I had been taught, and up to this time believed, regarding its mode of operation, pathology and remedial management; or accepting what I cannot help regarding as a plain, common sense understanding of all the facts in regard to it, viz., that while the train of phenomena in living human bodies called syphilis, can, in our time, nearly always be traced to contact, it had a beginning which was not so, which might be repeated. That it was not, *sui generis* (of its own kind) a condition always the same; and that remedial proceedings had some better foundation than empiricism. And finally, that it had near relations to a large group of so-called "diseases," whose sequelæ were characterized by permanent modifications, and losses of the natural structural arrangement of the material of living bodies, upon which natural or normal function depends, with, consequently, modifications and losses of function as these changes of structure progress.

What these teachings were, it is the purpose of this paper to state.

That to which the phenomena of so-called syphilis is due is designated "a specific virus or poison;" always communicated by actual contact or inoculation, (contagious or infectious.) The "virus" is supposed to be composed of, or contain, "germs," which, when introduced into an uninfected body, hypodermically, develop the "disease." It is certainly a matter to be noticed that it must be introduced otherwise than through the stomach to develop the disease. And whether it is directly through the external integument, or internal mucous membrane, it is, to all intents and purposes, "hypodermically," *i. e.*, through the investing integument.

I cannot help regarding this explanation of the modus operandi of any cause of any so-called "disease" as a most mischievous and misleading one. A "germ," according to Dunglison, means "the rudiment of a new being, not yet developed." "Germ force" means

"plastic force;" and "plastic force" means "the generative or formative power in organized bodies;" or, simply, "that which serves to form." Webster defines "germ," as, "In botany, the ovary or seed bud of a plant." "Plastic," as having the power to give form, or fashion, to a mass of matter. Does the so-called "syphilitic virus" do anything of this kind? It seems to me it does not. What it does is exactly the reverse, viz., modify or change, more or less completely, or entirely break up, existing "forms," or molecular arrangement of material in a living body, or structure. And its power, or force, everywhere else in nature than in a living body* is just *nil*, nothing. And, as function is altogether dependent on "molecular forms of structure," or the special molecular arrangement of material in living structure, as they are modified, changed, or lost, so is function modified, changed, or lost, whether by the "force stored up" in the "syphilitic virus," or any other of the numerous modes of force, "stored up in material" which changes, modifies, or breaks up the molecular arrangement of material in any living body. No existing function of a living body is bettered, or a new function added, in consequence of the work of the so-called "syphilitic virus." The sole effects of any of the modes of force "stored up" in material, which, in "living bodies," changes, or modifies, or breaks up the special structural arrangement of material in them, is "destructive,"—not "formative," or "constructive." Their materials are not "plastic"; nor is the force stored up in them "formative." And the application to any of them of the term "germ" is a misnomer, and mislead-

* Hunter's conclusions that syphilis could not be communicated to any inferior animals, proves to be incorrect. Turenne, in 1844 (France) succeeded in infecting monkeys. That rabbits, cats and horses could be infected from the monkey. His experiments lead to the idea of "syphilization," from the fact that inoculations became weaker and weaker as they were repeated; and a point was reached at which no further sores could be produced. His conclusion was, that prolonged inoculation ultimately resulted in "protection." In what way will be shown by and by.

ing, without new or modified definitions of the word; for the work of the builders of a house cannot be the same as the work of those who take or tear it down.

Rindfleisch, in the brief introduction to his work on "Pathological Histology," declares that there is not, in the whole range of pathology, a single lesion, or modification of structure, no matter to what cause it is due, which is not exactly similar to the changes of structure wrought by age or time.

The "germ," or "egg," or "cell" part of the so-called "virus" or "poison" of so-called "syphilis," is, therefore, altogether an assumption; for nobody has ever demonstrated a "cell," or a "germ" in the material, either with or without the aid of the most powful microscopes, or with any other treatment, physical or chemical.*

As it can be procured from syphilitic sores the virus is always blended with other products of the decay of tissue, and has, perhaps, never been completely isolated. In as clear a state as I have ever been able to obtain it, it presents to my eye, under a fair microscope (Ross, London) a homogeneous aspect all the time; not a "cell," or "germ," or "granule" was ever found, except such as are common to all sores, or suppurations. It appears, in fact, to be a homogeneous albuminous fluid, not at all unlike the "lymph" in small-pox, or vaccine pustules, plus common products of decay.

These facts and considerations forced me to abandon the "germ" concept concerning it.

But still the facts in regard to the fluid, or so-called "virus" of syphilis remained, and must be explained, or I must drop back into the old grooves again. The syphilitic fluid was a fact, as much so as that of small-pox, or vaccinæ; and inoculation was a fact; and the sequelæ

* A very recent European authority claims to have demonstrated the presence of "granules" in the virus of syphilis, and that its power for mischief in the living body resides in them.

were facts, that have occurred for centuries, and will probably recur for centuries to come.

What is the material of the "syphilitic virus"? what are its sources? and what is its chemical character?

The material is identical with that of living flesh, or possibly of the material of food arrested in its path to living flesh,* though the fact that the virus contains no pus globules must be received as evidence that its source is living tissue, or the materials of tissue, on its downward and outward career of organization. It is certainly from one, or the other, or partly from both; and it seems probable that it is at times from either or both; and if so, would account satisfactorily for the difference of results, which has led to the hypothesis of the "duality" —the double nature of the virus, as determined by the differences of results in different living bodies, *i. e.*, the soft and hard chancre, so called.

It is a matter for remark that in a large number of works on the subject I have consulted, no description of the physical appearances of the so-called syphilitic virus can be found, either as seen by the naked eye, or under the microscope. Descriptions of the appearance of the "sores" and "eruptions," "mucous patches," "buboes," etc.,—all modifications of the natural physical

* Prof. Saulsbury, of Ohio, verified by the subsequent researches of Dr. Lostorfer, of Vienna, has demonstrated the existence in the blood of some persons, under the influence of the syphilitic virus, of what Saulsbury calls "syphilis corpuscles," but not named by Lostorfer, who only claimed that he could, and did, by their presence or absence, determine syphilitic from the blood of uninfected persons, without knowing anything of its source. The discovery of Saulsbury was, and is, wholly neglected; while that of Lostorfer was denied by some of his cotemporaries, and in subsequent tests failed. It is probably certain both parties described what they actually saw under high microscopic powers. Had there been, or were there now, any "specificity" in syphilis, then appearances would be uniform in the blood of all infected persons. Efforts were made to fix the shapes and dimensions of "cancer cells," with like failure. As there can be no "specificity" in he ever changing forms of material in organic life, all efforts to fix them with exactness must of necessity fail, as they have failed in regard to syphilis and cancer.

appearances of the tissues—are abundant, with plenty of illustrations, plain and colored.

Simon (Chemistry of Man) states, that the syphilitic virus contains no pus globules; and beyond this brief allusion to its physical character—and nothing in regard to its chemical constitution—I have been unable to find anything in systematic works, or in organic chemistry, on the subject.

Exact statements in these respects are certainly very desirable, though not of sufficient importance to arrest further investigation until they are supplied, for the virus is certainly an albuminous fluid, or lymph, containing nitrogen, sulphur and phosphorus, difficult to isolate, certainly so in my observations, for chemical treatment, or observation and experiment.

Its exact chemical structure is, therefore, for the present, more or less shrouded in mystery; though its solution is merely a question of time. And by its chemical nature is meant, not alone its ultimate elements, for these are probably well known, but something of the mode in which they are combined in the virus. Hitherto attention has mostly been directed to the study of its morphological changes, but its chemistry must sooner or later engage attention, when its mystery will be cleared up.

The important fact in regard to it is that in its chemical complexity it stores up a mode of force, statical, possible or passive; which in living human bodies, becomes force dynamical, active or actual; expended chiefly in modifying, changing, or destroying the special molecular arrangement of material, or "the forms of organic structure," in living bodies on which natural function depends. And as they are modified, changed or lost, so is function changed, modified or lost. And the sole difference between the virus of syphilis or of gonorrhœa, as well as that of small-pox, and the whole catalogue of so-called "eruptive fevers," as well as that of "cutaneous diseases," is their speed and the extent to which they modify, change or obliterate the natural molecular

arrangement of material in living tissue. And just now clinical observers and pathologists are working out the extent of the changes effected by it in nerve tissue and viscera.

The sharply defined line heretofore separating physiology from pathology is being slowly but surely obliterated. The very titles of some recent works are indicative of this change, viz., Pathological Histology, *i. e.*, the formation and development of abnormal organic textures. And the changes of the structural arrangement of material in living bodies, now designated and studied as "organic diseases," are declared by Rindfleisch to be "precisely similar to those which occur as a consequence of age."* That which is now studied as a separate block of knowledge under the name of pathology, once brought fairly within the acknowledged domain of physiology, it may be only on its outer borders, the restraints and hindrances to the study of morphology on its naked facts will disappear, and the new order of things will certainly clear up many now obscure points in so-called pathology, and syphilis certainly be one of them.

Such, it seems to me, after careful examination, are the naked facts, as now understood and taught by the profession in regard to the material of the virus of syphilis, so called; its sources, and its chemical and physical characters. Not much of a showing, to be sure, but nevertheless, just what there is to show, on the changes which it effects in living tissue—human tissue—and it must by remembered that it makes none on dead tissue, nor anywhere else in organic life, except in monkeys, and through them a few inferior animals, and "therapeutics," the literature of the profession, is full and extensive.

What is the virus of syphilis? and, placed in contact with living tissue, what does it do, and how does it do it? It is composed of the material of the body or bodies of those from whom it is derived. There is no other source

* Rindfleisch, Path. Hist., New Syd. Soc., p. 2.

from whence it can come or be derived. In its peculiar chemical condition, its stores up force, which, when introduced into other living human bodies, hypodermically, changes or modifies the molecular arrangement of their materials, as well as physical contour, followed by modifications of function, and remotely by loss of natural structural arrangement of material or "forms of organic structure," and consequently, loss of function and death.

That is, in my estimation, a technical though provisional definition of the so-called syphilitic virus, which includes everything pertaining to its material, chemical nature, and results, when introduced into a living body for the first time, and allowed to do its work without check or restraint from remedial agents, management, or mode of life.

In the study of what it is, what it does, and how it does it, if attention is confined to it alone, without reference to similar phenomena elsewhere in organic nature, correct solutions of its problems are not likely to be reached; for the mode of operation of the syphilitic virus in living bodies is not *sui generis*, nor alone, but takes place in obedience to well defined laws; and is precisely analogous to many other processes in both the vegetable and animal realms of nature. Pollen, in the vegetable world, is an analogous substance, storing up force in its material, which, applied under certain conditions, modifies organic structures in growing vegetables. "Crossing" breeds, illustrates, in animal life, the power ordinary inorganic material in special organized conditions has of storing up force to modify subsequent organic structures. Reproduction, multiplication, and perpetuation of organic life, animal and vegetable, is all based on, and actually accomplished, by force "stored up" in material, to form, modify or change existing, or growing, or forming organic structures.*

* Force stored up. Perhaps it may aid in comprehending the conditions of force to state, that nothing is known of force except in two states, viz., force statical, or force potential, or force possible, or force passive,

It may not be unprofitable to study the work of a virus, so called, in modifying the structural arrangement of materials in living bodies, having simpler conditions than that of the syphilitic virus. Most of us in civilized life now-a-days, have both "to do and suffer" the simple operation and results of vaccination. A little clean albu-

stored up in material; to become, with chemical changes of structure, or mechanical changes of position or structure, force dynamical, or force actual, or force active.

Thus: a piece of coal or wood, such as is ordinarily used as fuel, is material storing up force potential, or force possible, or force passive; to become, by combustion, which is simply chemical changes in its materials, *i. e.*, chemical decomposition, which force possible, potential or passive becomes, in the act of chemical decomposition, or combustion in the materials in which it is stored up, force dynamical, or force actual, or force active *i. e.*, heat, or simply motion by matter. And this applies to all force and to all matter, inorganic or organic. Chemically complex organic materials store up force potential, possible, or passive; to become, under certain conditions, force dynamical, actual, or active. I think this applies to organic structures themselves as fully as it applies to a piece of coal or wood, and that the evidence to this effect is as complete as it is possible for demonstration to make it. Each special structure, histologically, stores up force potential, possible or passive, to become, by decay, physiological or pathological, force dynamical, actual or active; and the force stored up in living organic tissues, when it is changed from force potential, possible or passive, into force dynamical, actual or active, is what is called "function" in organic life.

Chemical changes in brain matter, modified or changed in the structural arrangement of material, is announced or made known by changes of function. Mental equilibrium gives place to delirium, or the reverse, coma; or, again, to what is called insanity, dementia, or paralysis, etc., etc.

And it applies to medicines. Medicines, drugs and medicines, are materials, storing up, in virtue of special molecular arrangement of matter, force potential, possible, or passive, or statical; to become, when introduced into living bodies, force dynamical, actual, or active; and is manifested by advancing, modifying, or retarding the rate or pace of molecular changes in the materials of living tissue; and not in the twenty to forty different modes designated in existing classifications of medicinal agents.

Thus: alcohol does not "stimulate," *i. e.*, advance the pace of molecular work, or changes in the materials of living flesh. On the contrary, the decline of temperature in most cases following its introduction into a living body, demonstrates that the speed of molecular work is retarded, and the changed or modified functions equally demonstrate that structure, and motion in structure, have been modified.

minous lymph on the point of a lancet, knife or needle; a few scratches of the skin, just sufficient to penetrate the cuticle, and the operation is complete. In forty-eight hours a reddish spot appears at the place of introduction, if the material, operation, and individual operated on, has been right—unprotected. At the expiration of a hundred hours a decided change has occurred, not alone at the spot of introduction, but the whole body participates in it. There is some elevation of temperature of the whole body; and at the point of introduction an opaque spot, whitish, surrounded by a zone of redness, more or less marked. At the end of two hundred hours, a distinct pustule has arrived at maturity, filled with a clear lymph, which speedily becomes floculent, desiccates, forming a dark brownish crust, which may be detached, or falls off, between the twelfth and eighteenth days after the introduction of the virus or matter. At the spot on which the crust or scab had formed, there is left a more or less decided excavation in the skin, upon which crusts successively form, as they are detached, until the final healing takes place; and at the end of from four to six weeks, or in some cases longer, the color of the skin has become natural. But there has been left a scar or mark, more or less circular, or it may be altogether irregular, with a number of small pits or excavations in it. And the object generally of this proceeding is to gain immunity from the effects of another virus called small-pox.

This picture represents only "straight" or normal cases. And it must be borne in mind that such are comparatively rare or few in number; for there are endless variations in the amount of constitutional disturbance, progress of pustule, and scars resulting, after the operation of vaccination. The operation may have other purposes than protection against small-pox, viz., to hurry up the progress of so-called whooping cough, indolent enlargements, etc. Nor is it altogether free from serious consequences. Within my own scope of observation,

death has ensued a good many times as a sequel to vaccination. These results were explained by the assumption that "impure" matter had been used, or the person was of a "scrofulous habit," etc. These are now regarded as conclusions drawn from erroneous premises, as I hope to be able to show before I get through with the subject.

After vaccination has been successfully accomplished, in a large majority of cases, but not all, small-pox lymph, and vaccine lymph may be introduced into the body with impunity, or at least without noticeable results, for a length of time somewhat variable, sometimes through life.

What has taken place in the body of a human person successfully vaccinated? What is vaccine lymph? In seeking a solution to the question, What is vaccine lymph? it is not needful to assume anything as a starting point, nor anything in regard to its containing "germs" or "organisms." Better to study it and its consequences in the living body on their facts. Vaccine lymph, like syphilitic lymph, small-pox lymph, etc., is identical in material with the material of the body from which it has been derived, and differs from all other fluids of the body only in the molecular arrangement of materials. Chemical complexity, everywhere and under all circumstances, stores up force, statical or passive; surrounding materials and conditions determining the character and extent of the modifications it will effect in them when it becomes force actual or active. Thus, the stored up force in the lymphs or viruses, which, in living bodies, gives rise to the several phenomena of small-pox, vaccinæ and syphilis, would appear elsewhere in nature as heat only. The changes effected on the exterior of living bodies by the small-pox and syphilitic viruses are obvious enough. What has occurred in the interior is not quite so plain, though it is absolutely certain that it is in the molecular arrangement of materials. From the activity of the processes in some of them, as small-pox, as evidenced by increased heat of body, the molecular

changes may be brought about in some such a way as a small flame applied to a sheet of cotton batting communicates its own mode of motion to the whole mass. Flame is force actual, active, which has been stored up in the materials undergoing combustion. Cotton stores up force potential, or passive, or statical, which becomes actual, or dynamical, in the act of combustion. Flame applied to cotton propagates itself by actual contact. Therefore, flame, cotton and contact are conditions for changing the molecular arrangement of materials in cotton. Cotton cannot be burned, or charred, twice, until the materials disintegrated are recombined again. So, of the results of vaccination, small-pox, etc., in living tissue. What has been done once cannot be repeated until the tissues have been remodeled again, so to speak. And but too often in living bodies the molecular arrangement of material has been, like the burned cotton, wholly lost, function abolished followed by death. For there is no greater certainty connected with the problem of life than that function is dependent on the special molecular arrangement of material in each organic tissue or viscus; and as this is modified, changed or lost, so is function modified, changed or lost; and for certain structures that is death to the whole organism.

Vaccine lymph, as an ordinary result, does not effect such changes in the molecular arrangement of the materials of living structure as to perceptibly change function; for if it did it would not hold its place a moment among remedial or prophylactic measures.

That such is the modus operandi of the virus or lymph producing the several phenomena called vaccination, small-pox, gonorrhœa and syphilis, is shown in many ways, as the acceleration of the general movement of material—fever—during their progress, as evidenced by the clinical thermometer, by the changes in the appearance of the cuticle and cutis beneath, at points of entrance or pustules, where the entrance has been hypodermically effected, and at other points, and eruptions, etc., elsewhere.

As all organic life, animal and vegetable, is made of one stuff, information may be very properly sought among the simpler forms of vegetable life, to throw light upon the complexities of animal life. Thus, something may be learned in regard to "storing up" force for special and definite purposes from the vegetable world. A vegetable seed is—

1st. The necessary material;

2nd. To store up the requisite force;

3rd. To form the structures of the new plant up to the point of independent existence; or the appropriation of inorganic material to its further growth and evolution.

Coming back again into the domain of animal life, the egg furnishes another striking illustration of "storing up force" in the requisite material for exactly like purposes as a vegetable seed, except that the young animal, after entering its stage of independent existence, requires organized material, in certain chemical conditions, for its further growth and evolution, but always "germinal matter," *i. e.*, material in which some previous animal or vegetable existence had "stored up" the material and force for its own preservation, perpetuation or multiplication.

The real difference between small-pox, vaccination, syphilis and gonorrhœa—and in the same class are included scarlet fever, measles, whooping cough, and the whole catalogue of "skin diseases"—is not "specificity," but mode and speed in changing the molecular arrangement of the materials of living tissue. And the mortality attending the processes of each follows very closely the speed, as determined by the temperature.

Small-pox, scarlet fever and measles, which are accompanied by the highest ranges of temperature, and, therefore, the highest speed, have the largest death rate. Thus, vaccination has a not very variable speed, its work in a living body being accomplished in something near a month of time, seldom less, often more. Small-pox has

a higher speed and longer duration, extending over nearly or quite three months. Measles, apparently shorter, yet the disturbance of temperature extends over one to three months. Scarlet fever has, perhaps, the highest speed, and extends over two or more months. Whooping cough slower than either, extending, at times, over a whole year, as determined by changed functions. Syphilis and gonorrhea have a still slower speed, with indefinite duration, syphilis, in many instances, extending over the remainder of life.

At certain stages, the temperature of syphilis, as well as of gonorrhœa, is from three to five degrees above natural; but in the main is nearly or wholly natural, though the change in the molecular arrangement of structure still proceeds, as definitely demonstrated by changing functions, and physical appearances of structure, within the scope of vision.

The whole catalogue of "chronic," *i. e.*, slow moving, "skin diseases," eczema, prurigo, etc., are characterized by little or no disturbance of temperature, and are, therefore, of indefinite duration, and have many very close points of resemblance to syphilis. It is, therefore, apparent from even a casual study of the phenomena of these several so-called "diseases," that they are due to modes of force, and the velocity at which they act, rather than to "specificity," or any essential difference in materials, or the force concerned in their movements.

The so-called "syphilitic virus," it seems to me, has been shown to be material identical with that of the living body from which it is taken, and differs in no respect from other fluids, or any special fluid, of an uninfected body, than in the molecular arrangement or structure of its material. That in this special molecular arrangement of material, there is stored up force statical, potential, or passive, which, when introduced into an uninfected living body, may become force dynamical, actual or active, communicating its own mode of motion, or, perhaps, more properly speaking, modifies the movement of material on its path

to living flesh, with the result of forming, so to speak, syphilitic tissue, which differs very widely from normal tissue in living human bodies.

I find little difficulty in getting a conception of how it is done, by studying other phenomena, chemical and dynamical, in the inorganic as well as organic realms of nature. Everywhere, bringing together two separate materials, storing up in their chemical complexity force statical, possible or passive, under certain conditions to become force dynamical, actual or active, if there exist any chemical affinities between them, the result is a *tertium quid*, a third something, having no resemblance, physically, to either of its component parts. Thus, in colors, blue and yellow combined in certain proportions, form green. Sulphuric acid and oxide of iron, one a fluid, the other a solid, united, form a third something which presents none of the physical appearances of either of its constituents. Among organic materials such results are still more striking, as in photography. Coal tar, crude opium, Peruvian bark and alcohol by chemical manipulation yield the most varied results. But my favorite conception, based on the unstable chemical states of the materials actually composing living bodies, and the so-called syphilitic virus, is a minute flame applied to a mass of fleecy cotton, with the single modification in the matter of speed; the cotton burning rapidly, in that respect resembling scarlet fever; while the work of syphilis goes on at a snail's pace; and when unmolested by treatment, or other external conditions, ceasing only when it has "no more worlds to conquer," no more tissue to disarrange.

The results, too, of remedial proceedings are very properly regarded as shedding some light on the problem. Medicines are materials, organic or inorganic, storing up force in themselves—*i. e.*, in their chemical complexity, or, molecular arrangement of material—which, in living bodies, have no other influence than a partial control over the physical movements of materials, as they ascend

to or descend from their condition in living flesh. And this within a very narrow range, for if the physical movement of material is advanced beyond a definite limit, as with strychnia, or retarded below an equally definite limit, as with prussic acid, they are ranked as "poisons." Others, again, operating beyond these limits in advancing motion of materials, are regarded as "caustics"; or below, as "anæsthetics," or "poisons." These, and other like operating medicines, are ordinarily composed of materials natural to the body, in other and widely different states of chemical union. But materials altogether foreign to the tissues of living bodies, as iodine, arsenic, mercury, etc., in various combinations, like complex organizations of materials natural to them, may appear to advance, retard or modify the physical motions of materials composing them; but, in reality, universally, and necessarily, acting always in the interest of waste of existing tissue, and increase of the speed of eliminating effete products and material. Whether the ultimate results are in the interest of repair or waste, depends somewhat on quantity introduced in a given time, and condition of motion in materials of structures, thus, sometimes doing what is deemed desirable work, at others effecting changes not only not desirable, but actually damaging.

The leading therapeutic agents for the remedial management of syphilis are mercury, potassium iodide, caustics, salines, natural saline mineral waters, to which may be added, though not so recognized, hard labor in the open air. Or sometimes agents operating exactly the reverse, as iron, quinia, bismuth, mineral acids, and many other so-called tonics, etc., etc.

Now what do these several agencies do? Mercury, confessedly first in importance on the list, is an agent of tissue waste *per se;* is material altogether foreign to the tissues of the human body, and in the laboratory of life, so to speak, its force statical, or passive, is displayed as force actual or active, first, last, and all the time, in

the interest of increased waste of living tissue, without much disturbance of temperature, and hence, is classed as an "alterative." There is, of course, a complex play of chemical affinities, as the result of the new conditions it introduces, difficult, and not now possible, to explain in detail; but the increased waste of existing tissue is the fundamental and important fact and result. And that is the precise reason why actual working practitioners, after experimenting unsuccessfully with other remedial agencies, invariably return to this imperfectly understood, but, in the main, certain working agency, in their hands. For persons in otherwise good health, not engaged in hard wasting labor, it is the *sine qua non* of remedial management, if success is aimed at.

Potassium iodide, the second on the list in importance, is, like mercury in one respect, half and half a foreigner to the tissues of the body, yet in good company, for the potash is a natural and essential constituent of living tissue; one of whose uses is to become a sort of vehicle, or car, to convey the results of interstitial decay of the tissues to their appointed places of egress from the body. Iodine, however, like mercury, is a wasting agent, *per se*, though operating slower. For persons in whom tissue making and repair is below par, it very properly takes the place of mercury in any of its various combinations.

Then come the salines—wasting agents, but essential constituents of living tissue in definite proportions. Introduced in excess, they become wasting agents, with less power than mercury or iodine, with the exception of tartar emetic. Sea voyages, natural mineral waters, travel, etc., etc., are auxilliaries, indispensable under some conditions, in remedial management of syphilis, viz., when the processes of waste and repair are performed too sluggishly. Caustics, too—agents whose force, statical, passive, or stored up, when applied to living structure, is manifested as force, actual or active, too rapid to preserve forms of organic structure, which are accordingly lost—have their place and uses in the

remedial management of so-called syphilis; and are essential adjuncts of effective treatment to break up, and secure the complete disintegration of tissue altogether out of natural structural forms; a necessary procedure to save the lymphatic system, whose function will be explained presently.

Neglected or not understood remedial agencies, are hard labor in the open air, exposed to the sun and weather.*

There is no more efficient ally of the syphilitic force dynamical, or actual, in the living body, than sedentary habits of life; for, in such, there is no proper rate of waste and elimination kept up; so that the work of changing forms of organic structure goes on without much opposition.

Then, again, there are conditions of living bodies in whom the work of repair is reduced to its minimum; while the rate of waste is in excess of even that of normal repair, in which the so-called tonics, agents which, in their stored up, or statical force, supplement, as it were, the deficient natural forces of repair, are not only demanded, but are essential to recovery, or continued life.†

* Dr. Alfred Ball, Surgeon of U. S. Volunteers, during the late war, informed me that when the soldiers lay in camp any length of time, he would soon have a large number of cases of syphilis on hand. Orders to march, especially if the duty and exposure were severe, was invariably followed, not by relief, but apparently good recoveries. In his own language, "We never heard much of syphilis during long and severe duty, but whenever we went into camp they were sure to turn up. But the cases that appeared in camp were not relapses from former conditions, but were new cases." Hard duty seemed to relieve them as if by magic.

† Syphilization, orginally suggested by Turenne's experiments on inferior animals with the virus of syphilis, was, perhaps, first carried into actual clinical practice by Sperino, of Turin. Prof. Boeck, of Sweden, while traveling in Italy in 1851, had his attention drawn to the results of Sperino's practice; and has, since that time, devoted himself assiduously to the subject at his home in Christina, and is now the leading authority in regard to it. Though in his hands, as it had been in Sperino's, it was a strictly empirical clinical measure, it is an effort in the right direction, and has a

It is thus seen that the employment of remedial agencies comes under the dominion of definite laws. Mistakes may be, and perhaps are, habitually made by the most expert prescribers, but the fault is not in the

solid, scientific basis. Its aim is to "saturate," so to speak, the system, and to attain by repeated inoculations, the end actually accomplished by the virus of vaccinæ, as well as those of small-pox, scarlet fever, measles, etc., *i. e.*, "protection," or "immunity," from future effects of these viruses after one "attack."

What syphilization really accomplishes, it seems to me, is to get up, and keep up, the requisite speed, and mode of "changing molecular forms of structure of living bodies," at which they are not essentially damaged during the process, *i. e.*, admitting the future performance of function, not perceptibly unnatural, as after small-pox, vaccination, etc., etc.

It seems to me that the results attending or rather succeeding the introduction of vaccine virus in unprotected persons, or persons into whose bodies it has never been previously introduced, who are suffering from whooping cough, at certain stages of the complaint, points out the ultimatum of the clinical management of syphilis. That vaccine virus, which has a definite, and not very variable speed, in doing its work in the living body, communicates its own speed to whooping cough, which has no definite speed, like syphilis, so that when the work of the vaccine virus is complete, the whooping cough has ceased, I have verified, again and again, during my professional career. In fact, it is one of our most certain clinical measures in whooping cough, at particular stages. But we are not without some positive clinical evidence on the point I wish to make, viz., that syphilis can be hurried through its stages, so as to save the structures, and gain immunity from it in the same way as small-pox, measles, etc., are self-protective. Thus: Prof. P. J. Farnsworth, of Clinton, Iowa, reports (*Cin. Med. News*, Dec., 1874, pp. 556,) a case of a gentleman who had the "copper discoloration of skin, loss of hair, pains in the bones," etc., who, while under treatment for "secondary" syphilis with no encouraging success, had the peculiar eruption of small-pox suddenly make its appearance, and pass through its stages in a mild form. When he had recovered from the small-pox, all traces of syphilis had disappeared. Twelve years later he saw the patient, who had subsequently married, and had offspring, with no evidence of syphilitic taint in either himself, wife or children. Here, small-pox had communicated its own rate of speed to syphilis, so to speak, both ending at the same time, without material damage to structure, as evidenced by his subsequent life during twelve years.

It seems to me, therefore, that the ultimatum of the clinical management of syphilis, will be by some mode of "force," "stored up," which will hurry it through its stages in the briefest possible time, and thus make it self-limited, and self-protecting, as small-pox, measles, etc.; and when seriously sought after, will, sooner or later, most likely, be found. The

absence of, nor in the variation of law, but imperfections of the prescriber in interpreting the actual condition of patients, behind the objective symptomatology presented for his study. Still, when conditions are more conspicu-

most successful clinical management is better explained in this way than any other now known, as will be shown by and by, when its clinical management comes under notice.

Sir Wm. Jenner, in his just published address on taking the Chair of the Clinical Society of London, (*Med. Times and Gazette*, Feb. 20, 1875,) says: "When any acute specific disease is epidemic, the public—the educated public—call loudly for a cure; and too often, I think, members of the profession call out as loudly, 'Eureka!' Now it seems to me that there are no grounds for expecting that a cure will ever be found for diseases of this class—(small-pox, measles, scarlet fever, etc.)—*i. e.*, for expecting that a drug or medicinal agent will be discovered, capable of arresting the progress of the organic changes which, set in motion by a special cause, and following each other in definite and ascertained order, constitute what we call an acute specific disease. For, in place of being diseased actions, these several organic changes, the evidence of which we call symptoms, are, as far as our present knowledge extends, processes, the first of which being called into action by some external cause—*e. g.*, the poison of the disease—are essential for the restoration of the intimate organic changes to the order and intensity which constitute health.

"I may illustrate my meaning thus:—Each of these diseases may be likened to a single fit of ague. We administer drugs to prevent the recurrence of the fit, but we do not cure the fit itself; the cold stage having commenced, and attained a certain instensity, the hot and sweating stages are essential for the restoration of the balance of health. So with small-pox. By vaccination we prevent its occurrence; but when the first of the phenomena, which, following each other in certain and definite order, constitute an attack of small-pox, occurs, we know that there is no road to health, but by the sequence of changes the symptoms of which mark the several stages of the disease; and to my mind it is very questionable whether if it were possible, by the administration of a drug, to arrest the essential changes which constitute any of these stages, health would be the result. And what is true of small-pox in this particular, seems to me to be equally true of all the acute specific diseases."

Sir Wm. does not include syphilis among "acute specific diseases," perhaps, because its course is so slow—left to itself, or imperfectly treated. But it falls in the same category, and when any mode of "stored up force" becomes available to hurry it through its changes in a definite and limited time, then will therapeutics be the master, which it falls very short of being now.

I well remember the disgust excited in my mind by Prof. Boeck's practice of syphilization, when I first read about it, twenty years ago. Syphilis

ously studied instead of "the disease," and "stages of the disease," there will be fewer blunders.

The purpose behind any and all remedial agencies can be clearly and definitely stated. In order, however, that they may be more clearly comprehended, it may be well to review the phenomena in the light in which they have been presented.

The train of phenomena called syphilis is brought about by the introduction into an uninfected living human body, hypodermically, of material, in such a state of molecular organization, as to store up force—statical, potential, possible, or passive—to become force dynamical, or force actual, or active, for its own multiplication and perpetuation amidst the complex materials of living human bodies, and thus effecting modifications of, or completely changing the structural arrangement of materials, on which natural function depends, in the various organic structures composing an individual living human body.

Unless purposely and knowingly inserted, the fact of the introduction of the syphilitic virus into a living human body by chance or accident, is, and can only be known, by changes, or modifications of structure, generally, though not always, at the point of its introduc-

seemed to me to be the most loathsome of all "diseases," and the idea of multiplying and perpetuating it in that way in living bodies, seemed to me to be the very height of absurdity, if not actually criminal. I then gave Prof. Boeck and his syphilization a most hearty and unqualified condemnation. But since I have been "re-constructed," medically, he, and his practice, appear in a very different light. Syphilis is not more loathsome at any stage then small-pox, and if it had the speed and limited duration of small-pox would cease to be a puzzle to actual working practitioners, who have to deal with it, just as small-pox has. But the therapeutic problems in the two cases are exactly opposite to each other. In the remedial management of small-pox, practitioners are more concerned in slowing its speed than with any other feature, while in syphilis the problem is to hurry up speed. This, syphilization does to some extent, but its nine to twelve months duration is too slow for the present state of civilization. Vaccination out of the way, the small-pox virus might become the "specific" of syphilitic treatment, as quinia is of ague. But vaccination, as now insisted on in early life, blots this chance out at later periods.

tion; first, the chancre, and certainly there can be but one conclusion as to whether a chancre can exist without changes in, or a total loss of, the structural arrangement of material in living tissue. For these must occur that a chancre, so called, can have an existence. Here comes in the caustic and mercurial treatment, whose object is to "stamp out," so to speak, the multiplying capacity of this special material; and if accomplished before the lymphatic system has become deranged, the relief, or restoration to normal condition again of the body, is complete at once. But, as often happens, the lymphatic system becomes involved, and then modifications of tissues having the highest rates of repair and waste, as the skin and mucous membranes, speedily occur, and they no longer present natural objective appearances. Sometimes the lymphatic system is overwhelmed at the initial point, and the result is, the glands nearest to the local point of introduction lose completely structural forms, repair is wholly arrested, waste goes on at a pace too fast to allow the debris to be removed by natural means and through natural channels, and suppurations, so called, are established, and the tissue of the gland is speedily broken up.

The order of the disarrangement of the tissues will be in the order of their stability, and the velocity of repair and waste in them. After the skin and mucous membrane, and lymphatic glands, the "mother of bone"—the periosteum—next shows departures from natural structural arrangement, followed in due time by permanent changes in the bones themselves; first noticed about points only covered by cutaneous tissue, though not likely confined to them; then, the smaller and softer bones about the nose; then, the interior structures of the globe of the eyes; and finally, the central mass and connections of the nervous matter—the brain and nerve masses and viscera—each suceeding modification, or loss of structural arrangement of matter, announced by changed or lost functions and physical appearances. Now, how are these modifications of the structural forms of the mate-

rials of living bodies brought about? Not by a "disease," but by adequate means to these ends; by force, passive, stored up in material, becoming force active, actual, or dynamical, in the midst of the chemical decompositions and recompositions certainly and ceaselessly taking place in human bodies, alive or dead.*

Living tissues, in detail, as well as in the total of each individual, are perpetuated from new material in obedience to orderly law, precisely analogous to the mode in which plants are perpetuated in the vegetable realm of nature, and not by a special police, or constabulatory force, as it were, in the so-called "vital force," the hypothetical means to which their preservation and perpetuation have been referred for so many centuries.

How are they multiplied and perpetuated? Precisely as wheat and corn, and all other vegetables, are multiplied and perpetuated—*i. e.*, by force stored up in material for that purpose, in the act of final decay in the performance of function, *i. e.*, a seed. But, in living animal bodies, the material in which the various structures store up the force for their own perpetuation, as they are disintegrated in the performance of their functions, it is the duty, or function of the lymphatic system to collect, and separate from the general debris of the structures, and unite it with the ingoing stream of new material, to make good the waste of structure in the performance of function. This is done just before the stream of ingoing material enters the right auricle on its way to the lungs. In the lungs this complex stream meets the inhaled gaseous atmosphere, when and there the physical, chemical or molecular changes as they may by preference be called,

* Thirty years since, my only sister died at the age of 21, quite suddenly, and therefore her body was not much changed from its nearly physical perfection during life, at her burial. The ground of the cemetery is now demanded for other uses. Opening her grave two weeks since, nothing was found, except portions of her osseous system, only dark lines in the soil, indicating the outlines of her burial case. The materials of her body got no rest in the grave, as they had had none during life.

take place which fits new material to become living flesh, capable of performing a function, chief among which is providing for their own reproduction and perpetuation from new material, as wasted in the act of functional decay. Whatever there is of "vital force" concerned in life, and living beings as complex as the human body, is to be looked for, and found, in the lymph; and, in the vegetable world, the "seed."

This understanding — explanation — of function, and play of matter and force, at once satisfies all scientific and moral requirements in accounting for all the actual phenomena of life, viz., personal identity, with changing material through life; and the physical death of the parent is a necessity that offspring may have individuality. It satisfactorily accounts for certain so-called "diseases," as scrofula, phthisis; tumors, from adipose to cancer; and for the physiological—histological and pathological—histological facts of normal life, and post mortem states of the tissues.

From these facts and considerations, and the inductions to which they necessarily lead, in regard to histogenesis and histolysis—play of matter and force in living bodies—it is not difficult to lay down general principles to guide the actual working practitioner in the remedial management of so-called syphilis, enough of detail being left to him to tax the best possible mental powers of each and every one.

They are as follows:

1st. For all in whom the processes of repair and waste of living structures is at its maximum, or standard of health, or near that, and in whose bodies there are certain structures, which have been so modified by the so-called virus of syphilis as to be incapable of performing natural functions, the indications are to waste them as rapidly as can be done without too much disturbance of the processes of repair.

To meet this indication, mercury in some form is the leading remedial agent, and most effective in vapor to the cutaneous surfaces.

2nd. With decreased and decreasing capacities for normal repair, mercury cannot be as safely employed as the potassium iodide, and salines.

3rd. When repair is manifestly below the normal standard, as evidenced by loss of appetite, weakness, and pallor of cutaneous surface, resort must be had to a mixed treatment, as potassium iodide in combination with so-called tonics; among which quinia will always hold a leading place, iron, bismuth, strychnia; and barks having peculiar properties—that is, storing up force particularly adapted to supplement the natural powers and capacity for repair, as columbo, gentian, black alder, prickly ash, poplar, cundurango, eucalyptus, etc., including cod oil.

4th. Where repair is much below the requisite pace, all wasting agencies must be laid aside, and all available means, hygienic and therapeutic, brought to bear to bring up repair as nearly as possible to the natural standard.

5th. In every condition, good food and every sanitary measure must be properly looked after. For living structures are not made out of nothing, but from the food eaten, and its character much influenced by surrounding conditions.

Previous and present health, occupation, situation in social life, etc., will have much to do, not only with diagnosis, but especially with prognosis, and consequently with remedial management. Active, hardy men and women, in young or middle life, will fare better, with and without treatment, than the sedentary, indolent, and poorly provided for, of whatever stations in life.

The purpose and aim of this memoir is to show that what is called and known as syphilis, can be understood in its entirety, viz., what is its cause, physical, chemical and dynamical; what it does in living human bodies, and how it is done; what remedial measures are proper in each individual case; what are improper; and that these things can be definitely stated, and definitely understood, without the scholastic furniture with which our books now clothe and surround it. And that the

actual working practitioner who can emancipate himself from the shackles of the nomenclature and ideals now held in regard to it—syphilis—and will study it on its own facts, and prescribe its remedial management based on separate studies of each individual case, can rarely fall into error, or if so, it can only be temporary, as the results of treatment will soon point out any errors in the mind work given to it in the beginning.

In closing, I wish to acknowledge my indebtedness to the authors of the published works on the subject, past and present. I recognize in them careful observers, and cautious experimenters, with rare descriptive powers. Viewing the phenomena of syphilis so differently from all of them, there seemed to me no place in the body of my monograph, where the obligations I am under to them, could be acknowledged, save just here.

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ARTICLE III.

## A CASE OF SUDDEN DEATH.

BY NORMAN BRIDGE, M.D., CHICAGO.

Was called, Oct. 7, 1874, in the evening, to see Mrs. B.; stout English woman, æt. about thirty; mother of three children (and having had one miscarriage); seven months pregnant. Was thrown from a carriage a month ago, receiving injuries which, although trivial, made her an invalid a day or two. She considered herself afterwards fully recovered from the injury.

Three days ago she had a slight chill, followed by a little fever; next day a slight return was noted of these symptoms, and on the following day (yesterday) Dr. J. N. Chaffee prescribed for her a mixture of quinine and Fowler's solution, and another mixture containing opium, ipecac, and spts. eth. nit. I think she got in each dose of her quinine about three grains. She declared she had

not slept for two nights, and complained of severe pain all over—there were few or no real uterine pains. She was clearly a little delirious—"flighty." She complained of the want of effect of her medicine. She vomited everything she swallowed. Her pulse was 120 to 130. Considering myself called simply in an emergency, I gave her ¼ gr. morph. sul. on her tongue, and ordered ℞ Chloral Hydrat., ʒ jss; Syrup, ʒ jv; Aquæ ad. ℥ ij. M. S. Take ʒ ij every half hour till sleep is procured. Charging that on the morrow the quinine mixture be resumed, and that the family doctor be sent for, the case was dismissed.

On the evening of the next day was sent for hurriedly. Found patient with much the same array of symptoms as on the previous visit, only there were more protestations of pain. Pulse 130; temperature 102½° F. Only broken sleep had been procured the previous night with the chloral mixture, although more than half of it had been given.

The patient begged for drugs to make her sleep. Her stomach was quiet. One or two doses of the quinine mixture had been given during the day. Prescribed: ℞ Chloral Hydrat., ʒ iij; Morph. Sul., gr. j; Syrupi, ʒ vj; Aquæ ad., ℥ iij. M. S. Take ʒ ij every half hour or hour for sleep.

At 10 A. M., 9th, found patient feeling much better; had slept some from two or three doses of the chloral mixture. Slight pain in head; no uterine pains; tongue coated a little (not previously); pulse 120, rather weaker than normal; bowels quiet, and urine plenty; temperature 99¼° F.; respirations, 28 per minute; mind perfectly tranquil and clear. Ordered the quinine mixture every three hours, and milk in abundance.

9th, evening. Complains of general pain in head; is "flighty" at times. Temp. 100¼° F.; pulse 125; respirations 24; tongue quite clean. Had taken a quart of milk. Finding myself compelled to retain charge of the case, I made careful examination of the chest and uterus. There

was puerile breathing over most of both lungs, but no other abnormality. The heart sounds were normal. The os uteri was firmly closed and flat. Could not detect the fœtal heart beat. Ordered the quinine mixture to be given every three or four hours. A tablespoonful of castor oil to be given, and the chloral mixture to be given every hour, if necessary, to procure sleep.

The next morning, at 7.20 o'clock, the husband of the patient, sleeping beside her, was awakened to find her dead. He said he had given her four doses of the chloral, the last between twelve and one o'clock; that at two o'clock a dose of the quinine mixture was given; that she had seemed better, and sat up in bed and discussed with him household matters in the most natural way for an hour or more; that at five o'clock she had expressed herself as feeling sleepy, and desired to be allowed to sleep; that soon after he heard her breathe heavily (the room being dark), and asked her what was the matter, and she replied requesting him not to disturb her, as she was nearly asleep; that very soon she became quiet, and he, supposing she was sleeping, himself went to sleep, and that he was awakened at 7.20 A. M., and she was dead.

At 9 o'clock blood was oozing freely from the nose.

An autopsy was refused.

What killed the patient?

Is it fair to presume that the administration of the chloral had anything to do with the fatal issue of the case?

# Progress in Medical Sciences.

ARTICLE I.

## PROGRESS OF SURGERY.

BY JNO. E. OWENS, M.D.,

LECTURER ON SURGERY, RUSH MEDICAL COLLEGE, CHICAGO.

1. Hæmorrhoids. By Mr. W. COLLES. (*Dublin Journal of Medical Science*, June, 1874; *Braithwaite's Retrospect*, Jan., 1875.)

2. Iodide of Potassium in the System. By Dr. T. L. BRUNTON. (*Practitioner*, London, June, 1874; *Braithwaite's Retrospect*, Jan., 1875.)

3. On the Surgical Treatment of Gluteal Aneurism. By TIMOTHY HOLMES, Esq. (*London Lancet*, July 11 and 18, 1874; *Braithwaite's Retrospect*, Jan., 1875.)

4. On the Surgical Treatment of Inguinal and Femoral Aneurism. By TIMOTHY HOLMES, Esq. (*Lancet*, Oct., 1874; *Med. Times & Gazette*, July, 1874; *Braithwaite's Retrospect*, Jan., 1875.)

5. A Case of Death from the Administration of Bichloride of Methylene. (*British Med. Journal; The Boston Med. & Surgical Journal*, Jan. 21, 1875.)

1. Internal hæmorrhoids are vascular growths, resembling a nævus in children, or erectile tissue in adults. They may be entirely destroyed by injecting into each hæmorrhoidal tumor about twenty minims of the ordinary tincture of iron, by means of a hypodermic syringe. To enable this to be done, the piles must be forced down, so as to be extruded. In a case thus treated, on examination four weeks afterwards, no trace of the piles could be discovered, except three nodules, each the size of a shriveled currant.

2. When iodide of potassium is swallowed, it is absorbed from the stomach, passes in the blood to the salivary glands, and is excreted by them much more readily than by the kidneys. It is, however, again and again absorbed and excreted, and does not get out of the system unless a purgative is given to cause its expulsion

from the bowels, before it can be reabsorbed. The same, says Dr. Brunton, is the case with the other iodides, such as those of lead and iron.

3. In the treatment of gluteal aneurism, present experience, says Dr. Holmes, points to the following conclusions:

*a.* Gluteal aneurisms, both traumatic and spontaneous, are very favorably circumstanced for the treatment by either rapid or gradual compression applied to the aorta or common iliac.

*b.* If this treatment does not succeed by itself, it may be supplemented by coagulating injection, or galvano-puncture, performed while the patient is narcotized, and the circulation commanded.

*c.* When such treatment fails, and particularly in aneurisms with imperfect or ruptured sacs, where it is not indicated, the internal iliac must be tied, when the surgeon thinks that he cannot find the artery outside the pelvis. But when the artery is accessible, the old operation, or the operation of Anel (the ligature of the affected artery as it approaches the tumor), should be practiced, according to the size and extent of the tumor.

*d.* The ligature of the internal iliac artery is liable to failure, in cases of spontaneous aneurism, from a diseased condition of the coats of the artery, and should always be avoided when other means of treatment are available.

4. On a review of the whole subject of femoral aneurism by the light of present experience, Prof. Holmes is led to the following conclusions:

*a.* That the operation of ligature of the external iliac artery has been, on the whole, fairly successful, as evidenced by a very small mortality in uncomplicated cases of hæmorrhage, and a mortality of about one-fourth in published cases of aneurism—a conclusion supported by the unpublished records of hospital practice, though there have been a few cases of recurrence of the aneurism.

*b.* That the operation on the superficial femoral, for

aneurism situated in Hunter's canal, is a very successful operation.

*c.* That the ligature of the common femoral is a perfectly justifiable operation; though whether more or less trustworthy than that of the external iliac artery, we are not as yet in a position to judge.

*d.* That ruptured aneurism in the thigh has been treated with a large amount of success by the old operation (incision into the tumor, rapid removal of clots, ligature placed above and below the aneurism.)

*e.* That the ilio-femoral and femoral aneurisms have been treated with a very fair proportion of cures in the few instances on record, by rapid compression, applied to the aorta or common iliac, but that there is no evidence to show that this treatment is less dangerous or more successful than the operation on the external iliac artery, when the latter is feasible.

*f.* That compression, especially digital pressure, has been applied to the treatment of inguinal and femoral aneurism with striking success, though in what proportion of cases we do not as yet know. That the comparative ill-success of this method, in our hospital practice, is more calculated to raise doubts of the efficiency of the application than of the soundness of the method itself.

*g.* That in rare cases, direct pressure, or even manipulation, may be advantageous.*

*h.* The arterio-venous femoral aneurism should be treated by double compression, applied to the vein and artery; which failing, Mr. Spence's method of tying the artery above and below is the most hopeful measure; and when this is impracticable, either the old operation should be preferred, or the case abandoned.

*i.* That spontaneous aneurisms of the profunda have been diagnosed, and successfully treated by compression.

* The object of "manipulation" is to alter the relations of the layers of fibrin in the aneurismal sac, in order to bring about a deposition of fibrin which becomes entangled in the projecting surfaces of the displaced laminæ.

*j*. That recent traumatic aneurisms of branches of the external iliac or femoral, are best treated as wounds of these vessels—*i.e.*, either by compression or by ligature at the wounded part.*

5. The patient was suffering from caries of bone, near the lachrymal sac. Operation was determined on, and Mr. Buller administered bichloride of methylene, by means of a perforated leather inhaler, covered with flannel. Three drachms were inhaled, and in two minutes the breathing became stertorous. After the operation, the pulse at the wrist suddenly parted, and then the respiration ceased. All known means for restoring animation were employed.

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# Reports of Societies.

## CHICAGO SOCIETY OF PHYSICIANS AND SURGEONS.

*Regular Meeting, March* 22, 1875.

(Reported by RALPH E. STARKWEATHER, M.D.)

The Society met as usual, at the Grand Pacific Hotel, the President, Dr. John Bartlett, in the chair.

Dr. Etheridge, of the Section on Materia Medica and Therapeutics, presented a written report, of which the following is a summary:

### SULPHIDE OF CARBON IN THE TREATMENT OF ATONIC ULCERS AND CHRONIC ULCERATION.

After adverting to the proverbial difficulty of successful treatment of ulcers, mention was made of their common features, namely, atony and chronicity, with a tendency

* See Mr. Holmes' conclusions as to the treatment of popliteal aneurism, (*Chicago Med. Journal*, Jan., 1875, p. 42.)

to extension and a total absence of reparative nature and cicatrization. The sulphide of carbon was used in ulcerations first in 1867, by M. Michel, while he was an interne in Saint Lazare. Its nauseous odor and its toxic action are the predominant characteristics, and have doubtless kept it from being extensively used.

By the German physicians, this agent has been employed in the treatment of neuralgias and arthralgias, probably because of its refrigerant and anæsthetic action. Compresses soaked in carbic sulphide in some aromatic essence were placed over the painful part, and renewed from time to time till relief followed. Its vapors mixed with those of iodine have been used in certain affections of the eye and ear. It has been used also upon the erysipelatous redness of chilblains.

Dr. Guillaumet also gives details of three cases of ulcers selected from a large number thus treated.

Case 1. Large ulceration of the right labium majorum of four and a half months duration, in a syphilitic subject. Cure in fifteen days.

Alice V., aged 23. Upon the inner aspect of the right labium there is a large ulceration, extending nearly its whole length, measuring about one and a quarter inches in breadth. It is atonic, has a grayish base, irregular serrated borders, and a depth of about one-fifth of an inch. The various treatment adopted by others was of no avail, the ulceration continued to spread. She came under observation four and a half months after the ulcer appeared. The sulphide of carbon was at once employed with gratifying success. Thirteen applications in fifteen days sufficed to produce complete cicatrization of the ulcer. After the first application of this agent there is no appreciable change in the aspect of the ulcer. Upon the fifth or sixth application, a sensible amelioration and a very rapid course of cicatrization followed. It is necessary to be careful in using the sulphide, because of its extreme volatility and nauseous odor. It may be applied as follows: The bottle containing pure sulphide

of carbon is held very near to the ulcer to be dressed; a piece of charpie is soaked in the liquid and squeezed upon the mouth of the bottle to expel any excess of the drug; then the piece of charpie is lightly and rapidly brushed over the surface of the ulcer which is immediately covered with a powder of bismuth subnitrate or of starch. The pain of the application is short, quick and very fugacious. The pain diminishes after a few applications have been made. As a rule, its intensity may be said to be in inverse ratio to the number of the dressings. The amount of the sulphide to be used should be proportional to the duration and vitality of the ulcer. If too much be used, cicatrization might be retarded.

*Resume:*

I. Sulphide of carbon is a powerful cicatrizer.

II. Its action is limited and rapid; it is wholly local, and does not produce a single accident which follows the inhalation of its vapors.

III. Its application is accompanied with pain, sometimes very severe—proportional to the susceptibility of the patient—but is of very short duration in most patients, followed immediately by a period of anæsthesia which is not constant.

IV. Sulphide of carbon acts upon ulcers of various kinds (syphilitic, scrofulous, diphtheritic, etc.,) and changes them all beneficially.

V. This is a valuable agent in the treatment of wounds or ulcers, presenting the common characteristics of atony and chronicity.

### ERGOTINE.

Dr. E. R. Squibb speaks as follows of ergotine:

The existence of one or more active principles, which may be isolated for therapeutic use, has been very generally believed, hence various substances have been extracted and sold under the name of ergotine by different makers, the dose and properties being equally diverse. Dr. Squibb, however, explains that he does not believe that there is an active principle separable from ergot,

which in any proper sense represents the drug, and that there is no such thing as ergotine. Of course certain of its constituents, such as lignin, starch, fixed oil, gum, etc., are known to be inert, and may be excluded by choice of a proper menstruum.

THE AQUEOUS AND ALCOHOLIC SOLUTIONS OF ERGOT.

These differ in their effects on the circulatory appa ratus. The aqueous solution excites the activity of the cardiac inhibitory centres and the vaso-motor centre in the medulla; it slackens the pulse, narrows the calibre of the small arteries, and increases the blood pressure. Very large doses paralyze the heart at once, and so effectually that the induced current fails to restore it. Such effects are not at all produced by the alcoholic solution. The latter produces symptoms akin to those of acro-narcotic poisoning, viz., irritation of the mucous membrane of the stomach and bowel, tonic cramps, agitation.

THE TREATMENT OF VARICOSE VEINS BY ERGOTINE.

Dr. Etheridge quoted from the Berlin Weekly Clinic several interesting cases of the above in which the treatment had been successful. The most generally accepted idea, is, as to the modus medendi of ergot subcutaneously, that diminution of the calibre of vessels is produced by the drug stimulating the smooth muscle of the veins and arteries to contract. In its use in varicose veins it doubtless partially produces diminution of the capacity of the veins by producing inflammatory infiltration above mentioned, which directly compresses the veins.

Dr. Max Schuler states as a result of many experiments that ergot produces contraction of arterioles. The smaller the vessel the larger and firmer is the contraction. Arteries increase proportionally in smooth muscular fibre as they become smaller. From this fact it is inferred that ergot exerts its effect on this muscular fibre, not necessarily through the vaso-motor nerves, for the same effect, viz., muscular contraction, could be secured in a part

injected with a solution of ergot, after the sympathetic nerve supplying the part had been cut.

Ergot by the stomach will produce none of the effects that can be called hæmostatic; subcutaneously it will produce them.

Dr. Bevan, of the Section on Clinical Reports, presented in writing several cases of interest, supplementing one of these by instructive details of the post mortem examination of the patient. The cases were limited to those of the nervous system.

The first case was that of a patient who was a Danish laborer, fifty years of age, with chronic myelitis. A year before admission to the County Hospital, while at work, he slipped from a ladder, falling sixteen feet, and struck upon his back. From time to time he had been under treatment, but as often the pain in back and side had returned. Walking became impossible, and he grew weaker. On examination, no tenderness along the spine; has to be supported when he walks—and holds the lower portion of the spine in a fixed position—gait is rotary. The treatment was seven grains of the potassium iodide with $\frac{1}{30}$ gr. strych. sulphate in bitter infusion three times a day—after twenty days, treatment was changed, and one-half fluid drachm of ext. ergotæ fluid was exhibited three times a day—a lotion of equal parts tr. iodine and glycerine was applied to the spine and sacrum. The improvement was speedy and marked—motion of legs pretty fair—pain is slight, sleep and appetite greatly improved.

Dr. Bevan next gave the history and treatment of a case of subacute meningitis. Dr. Bevan then reported a case of epilepsia. The fourth case cited was also one of epilepsia and in a patient thirty-five years of age, an Englishwoman—of which the particulars are briefly as follows: For upwards of seventeen years the patient has had epileptic seizures, the intervals sometimes being so long as eight months. She has borne several healthy children—the catamenial functions have been normal.

An epileptic attack would come on somewhat thus: while sitting near the fire, she would drop into a partially insensible condition, resembling sleep, from which it would be impossible to arouse her. This stupor would continue ten to twelve hours, and be so profound that she has been moved in a carriage several miles unknown to herself. Pain and weight in the top of the head have lately troubled her—emaciation progresses. She never asks for food; but if awake, will take it when it is presented to her. Pulse would be 72, respiration 12, during one of these seizures; muscles flaccid, occasionally twitching; jaws firmly closed. The treatment which gave her prompt relief was the potassium bromide.

Shortly before discharge from the hospital a tonic was ordered: ℞. Strychniæ Sulphatis, gr. $\frac{1}{60}$; Acidi Nitrici Diluti, gtt. v; Infus. Gentian, f. ℥ ss. M. Take the same three times a day.

During the discussion of the above papers, Dr. Bevan mentioned a case of diabetes mellitus which he had treated with excellent results by the use of the fluid ext. of ergot in doses of one fluid drachm four times a day. The amount of urine voided was sixteen pints daily; ten weeks after beginning treatment the amount of urine daily voided was only four pints, and very much less saccharine; the thirst and emaciation of the patient had become much less.

Dr. Owens queried whether there was any disease ergot would not relieve, and quoted a case of diarrhœa of several months duration which he relieved by using the wine of ergot. In regard to the sulphide of carbon, his experience in its use upon ulcers had been satisfactory. One patient had an ulcer upon each leg—he treated one of the ulcers by elevating the limb and warm water dressings; the other, he treated with the sulphide of carbon, and healed the ulcer quickly. The time lost by the first method of treatment was over two weeks.

Dr. Hyde thought that in many instances chronic ulcers

could be treated in no way more efficaciously or expeditiously than by cross strapping and starch bandage.

Dr. Powell mentioned two methods of treating ulcers of the leg—one by transplantation of skin; the other by half-inch incisions at intervals around the entire ulcer. It would not be sufficient merely to remove epithelial scales—actual integument was needed—a piece the one-sixteenth of a square inch would suffice to make a dozen insertions—each insertion would form a centre for granulation, which would cover about an inch. Upon the coalescence of these various islands of healthy skin, the ulcer would be healed. Little cuts should be made in the floor of the ulcer, and a piece of sound skin inserted.

Dr. Hollister adverted to a method formerly used by Dr. Brainard, that of placing upon the ulcer a piece of lint sprinkled with a little iodine.

Dr. Hyde had had good results in cases of ulcers from indolent buboes in the employment, after the above method, of bromine.

Dr. P. S. Hayes said that in one of the preparations of ergot, acetic acid was used, about one per cent. being added to the officinal fluid extract, which rendered the liquid preparation more permanent; the acid has the effect of removing all inert matter; ergotine is not a simple body like the morphia sulphate.

Dr. Powell, in a case of double popliteal aneurism, had employed hypodermic injections of ergotine upwards of five weeks, with no good results; one of the tumors even enlarged.

Dr. Etheridge remarked, that in treating varicose veins, the injections of ergotine would be useless unless made near the varix. The local inflammation produced by the irritating alcohol might be sufficient to diminish the tumor.

He never recommended the alcoholic solution for hypodermic injections; the alcoholic and aqueous solutions have no one effect in common.

One grain of the aqueous extract represents one

minim—this properly diluted may be used for hypodermic injections.

The discussion was continued by Doctors Merriman, Davis and Henrotin, with reports of cases.

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# Clinics.

## ILLINOIS CHARITABLE EYE AND EAR INFIRMARY.

*Clinical Lectures, by* Dr. E. L. Holmes.

### MALIGNANT DISEASES OF THE EYE.

Gentlemen—I have an opportunity of presenting to you a patient with melanotic cancer of the eye. We can spend an hour no more profitably, I think, than in studying this and the three other cases of malignant disease which have come before us during the last three months.

The patient, an Irish laborer, 50 years of age, gives his history as follows: He was always in excellent health, although thin in flesh, till about six months ago, when he began to lose weight and experience fatigue at ordinary labor. Thirteen years ago he lost the sight of the *left* eye by accident, which caused very great atrophy of the globe and of the corneæ especially. He states that it is but four months since an enlargement of this eye was observed, as also the appearance of numerous small tumors in different parts of the body, which have grown to their present size in this short time.

You now perceive that the patient is exceedingly emaciated, and so weak that he can walk with great difficulty. There are three very large black lobes situated on the upper, outer, and lower portions of the atrophied eye. The mass does not protrude much anteriorly, and yet fills the anterior portion of the orbit so completely that

the tip of the finger cannot be pressed between the globe and walls of the orbit. The orbit can scarcely be so completely filled posteriorly as anteriorly, for movements of the sound eye are still accompanied with considerable motion of the diseased eye. I suspect the antero-posterior diameter of the growth is very much less than the perpendicular or transverse diameter.

The patient has experienced a sense of fullness but no pain, although for some weeks he has suffered from a peculiar dizziness. The sclerotic has evidently been absorbed by pressure of the growth from within, which now appears to be covered by a very thin layer of conjunctiva as in certain staphylomata of the choroid and sclerotic. The jet black mass is very hard but not tender on pressure.

On the back, just below the seventh cervical vertebra, is a round tumor, an inch and a half in diameter and movable under the skin. In both gluteal regions, on the left thigh and on the right side of the chest, are similar tumors, some of which are nodulated. On each side of the neck, under the sterno-mastoid muscle, is a large, ill-defined swelling, which is quite firmly attached to the adjacent tissues. These tumors are undoubtedly cancerous.

The iris, ciliary processes and choroid, with all their nerves, have evidently been wholly absorbed, probably long before the commencement of the abnormal growth, for we seldom meet with a case of intra-ocular tumor which has produced so great increase of tension (hardness) without pain.

If the patient was not so positive in regard to the time when he first observed the diseased growths in the eye and other localities, one might almost doubt the correctness of his statement, for I have never met with a case in which the tumor became so large in four months, although I have enucleated the globe for such tumors in fifteen cases. It is impossible to state how long the abnormal process may have existed in the atrophied globe before enlargement began.

There is some obstruction in respiration, possibly induced by cancerous growths in the lungs. The patient is so exhausted that surgical interference is out of the question. (The patient died five days after the clinic, in another institution. No autopsy was permitted.)

This case adds interest to the history of another patient you examined a few weeks ago.

Mr. A.; forty-seven years of age; had been blind in the right eye nearly twelve years. During the last two years he suffered frequent attacks of violent pain, with severe symptoms of inflammation. This comprises nearly all the previous history we can obtain. You remember the globe, at our first examination, was *very tense*, the cornea somewhat opaque; the iris, with pupil closed, appeared to be in contact with the posterior surface of the cornea.

The conjunctiva was greatly congested, although it was not œdematous, neither were the lids swollen.

You recollect I diagnosticated a glaucomatous condition of the globe from choroiditis, possibly caused by the growth of a choroidal sarcoma, and urged the immediate extirpation of the globe. On dividing the globe, after the operation, it was found to be almost entirely filled with a dark colored mass, which the microscope proved to be a sarcoma.

By turning to the specimen which I removed from a young lady two years since, you observe this form of tumor in its early stage, for it occupies but a small portion of the intra-ocular space.

Whenever an adult patient complains of loss of sight in a portion of the field of vision, and you observe with the ophthalmoscope a circumscribed elevation behind the lens, without trembling of the retina, you can almost certainly—according to my experience—diagnosticate the case as some form of tumor, and not a simple detachment of the retina. It is important for you to know that tumors of the choroid, iris, and ciliary bodies, are pecu-

liar to adults, and are almost invariably malignant. The earlier they are removed, by extirpating the globe, the more certainly will life be prolonged.

I now present another unfortunate patient, with an epithelial cancer of the conjunctiva (sclerotic) and cornea. The patient, a farmer, forty years of age, first observed, about eighteen months ago, a peculiar growth near the inner canthus of the left eye. The patient cannot describe its early appearance very satisfactorily, except that at first it was thought to be a pterygium. The growth was removed by his family physician four times during the last four or five months. You now perceive a circular tumor, about half an inch in diameter, and a quarter of an inch in thickness, situated equally on the cornea and sclerotic. The surface is very red and rough, and, except in color, strongly resembles certain fissured warts on the hand. The tumor is remarkably well defined throughout three-quarters of its periphery, which is not the case with the other inner and lower quarter. The conjunctiva adjoining this portion of the tumor, is very red and œdematous, as if the tissue had already invaded it.

Dr. Danforth has kindly examined a minute portion of the tumor and found it to be a typical specimen of epithelial cancer. So well defined is the corneal portion of the tumor that vision is still excellent, although half of the pupil is covered. Most unfortunately the other eye was injured in boyhood to such an extent that vision has ever since been exceedingly imperfect. In enucleating the eye it will be necessary to remove the affected portion of the conjunctiva with the globe.

Before I leave this subject I will exhibit a specimen of melanotic cancer of the conjunctiva (sclerotic) and cornea, which I removed from a lady a year since, and which has a history similar to the one just related, which at first resembled a simple pterygium. You perceive the growth is remarkably well defined, smaller than the one you have just seen, but black and more elevated. The

disease had caused considerable pain, which had several times been relieved by removing the tumor. Vision was not impaired.

I think you are safe in assuming that any growth of the sclerotic and cornea, which is firmly attached to the subjacent tissues, and which reappears rapidly after it has been cut away, is malignant. Fortunately doubt can generally be removed by a preliminary microscopic examination of a minute portion of the tumor.

In conclusion, I desire to recall your attention to the two cases of malignant disease in young children, which some of you examined a few weeks since. You observed in an infant twenty months old, a peculiar glistening appearance behind the pupil of the right eye, not much unlike polished German silver. This could be readily seen through the immovable pupil without the aid of the ophthalmoscope. With this instrument vessels could be seen spread over the surface of the tumor. This appearance is so characteristic and so rarely observed except in this disease of the *retina*, called *glioma*, that you can seldom make an incorrect diagnosis in such cases. This disease is most frequently found in young children, and is terribly malignant. Its ultimate development is well illustrated in the case of the boy four years old, which you saw with an enormous fungus protruding from between the distended lids fully an inch and a half, and covered with black crusts.

The removal of glioma by extirpating the whole globe, is generally followed by a speedy development of a similar growth in the orbit, which soon proves fatal. The removal of a sarcoma is a more satisfactory operation, for the cancerous tissue is not especially prone to return in the orbit, but in some of the internal organs. The average duration of life subsequent to such an operation is said to be about four years.

The practical lesson, therefore, for you to learn, is to make an early diagnosis in all these cases, and immediately extirpate the globe.

# Selections.

## ON THE ALLEGED SUCCESSFUL TREATMENT OF TYPHOID FEVER BY "COLD."

BY FREDERICK T. ROBERTS, M.D., B.Sc., M.R.C.P.,

Assistant Physician and Teacher of Clinical Medicine at University College Hospital, etc.

Among the remedial measures which are attracting attention at the present time, some of the most important are those which have come into prominence in connection with the treatment of febrile diseases, and which have for their object the application of cold to the external surface of the body. Of course they do not involve any newly-discovered principle, for they are merely revived methods of a plan of treatment which is more particularly associated with the name of Currie, who laid down definite rules as to how and when it should be carried out. These measures have been during recent years much more extensively and generally employed on the continent, and especially in Germany, than in this country; but anyone who is acquainted with current medical literature must be familiar with the fact that they have not been ignored by the profession here, but have been duly recognized as affording valuable aid in the management of fevers, under certain circumstances, and that their efficacy has been tested by several accomplished observers, such as Wilson Fox, H. Weber, Ringer, Thompson, Greenhow, Clifford Allbutt, and others.

The object of the present paper is to offer a few remarks with reference to the alleged advantages of the use of "cold" in typhoid fever. But before considering the matter in connection with this particular complaint, I wish to make some observations of a general character. First, most of the methods by which the application of cold is effected require much care and attention in carrying them out; they must be conducted under the personal supervision of a competent medical attendant, and their effects need to be thoroughly watched. They have been lately alluded to as "simple remedial measures," but this they are not in any sense, for most of them involve no small difficulty in their execution, especially in private practice,

while as regards their effects on the system, they by no means come under the category of simple, harmless measures, such as may be adopted in a routine, off-hand fashion. Secondly, the more evident effects which have been noted from the employment of these applications in febrile cases are, the reduction of the temperature of the body; diminution in the frequency of the pulse; the checking of tissue change, as evidenced by the excretions and by wasting being less rapid; the relief of nervous symptoms; and the modification of the eruption in certain of the exanthemata. The eruption may be encouraged to come out, as in scarlatina or measles; or, it is stated, it may be diminished in amount and improved in quality, as in small-pox. It is in the treatment of cases attended with very high temperature—cases of hyperpyrexia—that the beneficial results of applying cold to the surface, by means of baths, etc., have been most signally obtained; and here it may be said, without any exaggeration, to have saved the lives of patients who must inevitably have died had not this method of treatment been adopted.

Several German physicians have spoken highly of the treatment of ordinary cases of various fevers, and among them of typhoid fever, to which disease I desire now to call attention more particularly. In a paper on typhoid fever in the recent volume of the St. Bartholomew's Hospital Reports, Dr. Gee considers the use of external cold in its treatment, but apparently rather from a hypothetical point of view than from any actual experience of its advantages. He implies that, if employed at an early period, during the primary fever, it might control the local intestinal lesion, by limiting the number of follicles involved; while in a more advanced stage it might be useful in reducing the secondary fever which accompanies the morbid changes in their progress.

The conclusions of those observers who have practically tested this method of treatment deserve our thoughtful attention, and it is important to ascertain what they affirm respecting it. None of those who are reliable pretend that they can actually *cure* typhoid fever, either in the sense of checking the disease at the outset, or even of shortening its course. To talk of *curing* or *arresting* this complaint shows a want of knowledge as to its nature. At the best, we can only guide it in its progress, and endeavor to bring the patient successfully through the

dangers which he has to encounter. This remark applies not only to the treatment now under consideration, but to any other which claims an influence of this kind over typhoid. Some believe that the convalescence is more rapid after the treatment by cold; but others deny this. So also is there a difference of opinion as to whether it affects the more prominent symptoms, such as diarrhœa, tympanitis, intestinal hæmorrhage, etc.; some asserting that these are beneficially influenced, others that they are not. All seem to agree that it does not increase the tendency to lung-inflammations, or aggravate these if they already exist. The most important statement made is, that this method of treatment has greatly reduced the mortality from typhoid fever, particularly when the cases have been treated from an early period. Certainly the returns made show a great difference in this respect, when the past is compared with the present, and seem to indicate a highly satisfactory result. At the same time, before any certain conclusion can be arrived at, a large number of cases ought to be taken into consideration; for it often happens that a series come under treatment which are of a mild type, and the mortality may present a very low percentage, whatever treatment may have been adopted; while some epidemics are very fatal. Judging from personal experience, and combining hospital with private practice, I believe that the rate of mortality has not been higher in the cases which have come under my own notice than it is represented in the German returns. The mortality in former times was decidedly high, and it would be well to know what modes of treatment were then adopted, as they were not always of a harmless character in days gone by, while the diet and hygienic conditions—most important elements in the treatment of typhoid—were not attended to then as they are now.

Those who adopt this plan of treatment are anything but agreed as to the details of carrying it out. The principal methods employed are frequent cold or tepid sponging of the skin, wet-packing, cold baths, affusion, and tepid baths gradually cooled. Some pursue the treatment vigorously in all cases; others only when the temperature reaches a certain height. There are also differences as regards the duration of each application, the frequency of their repetition, and the length of time during which they are continued.

I venture to state briefly the conclusions which I have

arrived at with respect to the treatment now under consideration.

1. It is highly desirable that the members of our profession should be more generally impressed than they are at present, with the usefulness of the various modes of applying cold to the surface of the body in febrile cases, under certain circumstances; and that they should be prepared without hesitation to carry one or other of them out efficiently whenever this plan of treatment is indicated. This applies to typhoid in common with other fevers.

2. On the other hand, to adopt a routine hydropathic treatment of any fever seems to me most objectionable, and this applies especially to the more severe methods which are advocated. As already remarked, they are not easily carried out in general practice; they are certainly not required in a large proportion of cases; most of them are anything but pleasant to the patients, and they may prove very trying and exhausting, especially if frequently repeated, as they usually need to be if the treatment is efficiently fulfilled; while it must be remembered that they are not harmless measures, but may have a powerful influence for evil as well as for good. With regard to typhoid, many cases do not come under observation until it is too late to attempt to check the primary fever, even supposing that the intestinal lesion could be thus limited. For these and other reasons I do not see that, at present at least, a hydropathic treatment of typhoid fever in general practice has any claim to our support. If it is thought worthy of trial, it ought first to be fairly tested in *bona fide* cases of this disease, and under the strictest and most competent supervision. With regard to sponging of the skin, I believe that this is often very useful, and ought to be employed far more frequently than it is at present, in typhoid as well as in other fevers. With proper care it does no harm, while it often gives much relief, and is beneficial in other respects.

3. The cases in which the more severe methods of applying cold are indicated are those in which the temperature is already very high and remains so, or shows a tendency to rise rapidly, especially if at the same time there are signs of much nervous disturbance. Unquestionably this plan of treatment is not resorted to under these circumstances nearly so frequently as it ought to be. It is difficult to lay down any exact rule as to what

temperature indicates the necessity for adopting it, but if it reaches to 106° F. and shows no tendency to fall, or, still more, if it continues to rise, this treatment deserves due consideration. Necessarily much will depend on the actual condition of the patient, and every case must be thoroughly considered in all its features. The best method seems to me decidedly that of placing the patient in a tepid bath, and gradually cooling this. Affusion over the head is useful if there are marked nervous symptoms. Of course it is imperative that this treatment should be always conducted under the strictest supervision, and its effects carefully watched.—*Practitioner.*

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## ON THE PHYSIOLOGY OF THE ACT OF VOMITING.

BY W. H. BROADBENT, M.D., F.R.C.P.

In the interesting article on vomiting in the *Practitioner* for January, by the Editor, an active part in the expulsion of the contents of the stomach is attributed to the diaphragm; that is, the stomach is said to be compressed by a simultaneous contraction of the diaphragm and abdominal muscles. This, moreover, is what is taught in most of the standard works on physiology, and it is considered to be established by an experiment in which the contents of the stomach were expelled by the contraction of the diaphragm after the abdominal parietes had been cut away to near the linea alba.

We cannot attach demonstrative value to an experiment in which such extensive mutilation is practiced, and I have been led by observation of the phenomena of vomiting to question the accuracy of the generally received account of its production, and to come to the conclusion that the contraction of the diaphragm does not coincide in time with that of the abdominal muscles, but that the diaphragm first descends and is fixed by closure of the glottis, forming thus a firm but passive and merely resisting plane, against which the stomach is pressed by the actively contracting muscles of the abdominal wall.

I might cite in favor of this view the anatomical consideration that the œsophageal opening in the diaphragm lies between the decussating fibres of the pillars, and that when these fibres are contracting powerfully they will compress the œsophagus. This point, however, has

frequently been set forth, and all *a priori* arguments, even from anatomical facts, must yield to actual observation.

I have attempted direct experimental observations, but under circumstances which did not permit of definite conclusions, since they were made on animals in which the anterior wall of the thorax was removed for the purposes of another investigation. Such as they were, however, they were confirmatory. But I must rely entirely on what may be noted in the human subject in the act of vomiting. During the antecedent nausea and in the intervals of the paroxysms, there is shallow respiration with a wide-open glottis, together with frequent sighing. A paroxysm is ushered in by a sudden inspiratory gasp—that is, by a descent or contraction of the diaphragm—and the success of the effort of expulsion appears to depend greatly upon the extent of this descent, and upon the point at which the diaphragm is arrested and fixed by the closure of the glottis. If the diaphragm were in active contraction at the moment of actual vomiting, we might expect that at any rate some of the sounds then produced would be inspiratory, whereas they are entirely expiratory, and much air is often forced out of the chest by the same act which expels the contents of the stomach. Any contraction of the diaphragm must thus be overcome as well as the resistance of the glottis. Another consequence of contraction of the diaphragm as a part of the expulsive effort in vomiting would be a tendency to inspiration of the vomited matters while passing over the orifice of the larynx, which we might expect to see abundantly realized from time to time; whereas any slight entry of these matters which takes place, occurs in the inspiration which follows the actual vomiting. This same deep inspiration, again, after the convulsive retch, would appear to be conclusive evidence that the diaphragm had no share in it. It may be added that we should scarcely have the powerful compression of the lungs and heart in the act of vomiting, of which we sometimes seek to avail ourselves therapeutically, were the diaphragm contracting entirely against the expiratory muscles. Finally, the expulsive effort may be defeated by maintaining the glottis open. Such, at least, is my conclusion from a painful personal experience or experiment carried to the extent of my powers of endurance.

This note may be fitly ended by an observation in

which the theory of the act of vomiting here maintained was turned to practical account. While resident medical officer to St. Mary's Hospital I performed the operation of tracheotomy on a young child. Two or three days afterwards I was called to the child, and found it in convulsions. Watching it carefully, I perceived that the general convulsive movements were preceded by violent contraction of the abdominal muscles, with facial movements suggestive of vomiting. The attempt to expel the contents of the stomach was, however, defeated by the absence of *appui* for the diaphragm by closure of the glottis, due to the opening in the trachea. Recognizing this, I closed the tube at the moment of each expulsive effort; free vomiting occurred, and the convulsions at once ceased.—*Practitioner.*

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## Editors' Book Table.

[NOTE.—All works reviewed in the pages of the CHICAGO MEDICAL JOURNAL may be found in the extensive stock of W. B. KEEN, COOKE & Co., whose catalogue of Medical Books will be sent to any address upon request.]

PHYSICIAN'S CASE RECORD AND PRESCRIPTION BLANK BOOK, WITH VISITING LIST. Cincinnati Case Record Company. 1875.

Upon the first appearance of this Case Record as a candidate for popularity, we were not so much prepossessed in its favor as we have subsequently become by a practical acquaintance with its advantages. "The proof of the pudding is the eating thereof," and the same may be said of other things besides puddings. The use of these Case Records will enable the student, we mean the physician who studies his cases, to preserve a mass of clinical memoranda which would otherwise be lost. The Record has been found especially useful for the preservation of Notes of Hospital Practice, and for this purpose we have introduced it into St. Joseph's Hospital, where its advantages have been apparent to all. Some trouble is

doubtless entailed by the use of any system of recording cases, and this will prove an insurmountable objection to all methods in the eyes of many. By these books, this trouble is reduced to a minimum, and, in comparison with the value of the object to be attained, becomes insignificant. H.

QUESTIONS IN ANATOMY: for the Use of Students. By *Corydon L. Ford, M.D.*, Professor of Anatomy in the University of Michigan, Ann Arbor, Mich. 1873.

This little book must prove very useful to students as a guide and indicator of what is necessary and useful to be learned in anatomy. The answers to the questions must be looked for elsewhere, in a text book, or in that best of all anatomical text books, the human body. The questions will serve very well to concentrate the attention of the student, and prevent waste of time upon incidental or irrelevant matter. An improvement suggests itself in the "make up" of the book, which we venture to hint to the author before the publication of a new edition, *i. e.*, the interpolation of blank pages upon which the student might write his answers as drawn from his own dissections, thus constituting it an invaluable aid to his memory, more permanent by far than his recollection of lessons in text books or oral instruction. H.

TRANSACTIONS OF THE PATHOLOGICAL SOCIETY OF PHILADELPHIA. Volume Fourth. Containing the Report of the Proceedings for the Years 1871–2–3. Edited by *James Tyson, M.D.*, Hospital Lecturer on Pathological Anatomy and Histology in the University of Pennsylvania, etc., Recorder of the Society. Philadelphia: Printed for the Society by J. B. Lippencott & Co. 1874.

A model volume, containing a List of Former Presidents, the Officers and Committees of the Society for the past year, a list of Members, comprising Non-Resident and Corresponding; and a List of Specimens presented to the Society, the Address of the Retiring President, and the Report of the Committee upon the Pathology of the various Morbid Specimens referred for Examination.

One feature in the list of members is somewhat novel, *i. e.*, the addendum, to certain names, "forfeited membership for non-payment of dues," which can scarcely be commended on the score of good taste, however efficient it may be as a protection to the finances of the Society.

The report upon each morbid specimen is brief, clear and explicit, based upon careful direct examinations, sustained, when necessary, by authority, but uncomplicated and unobscured by discussions and personal opinions.

The specimens represented number two hundred and forty-three—upon thirty-nine of which special reports have been made, of which nine are well illustrated by wood-cuts.

The whole constitutes the best specimen of a work of the kind we have ever seen, reflecting credit upon the Society at large, and especially upon the committees. The mechanical execution of this Report is very far above the average, and the paper, type and press work are creditable to the printers, Messrs. J. B. Lippencott & Co. H.

A GUIDE TO THE PRACTICAL EXAMINATION OF URINE: for the Use of Physicians and Students. By *James Tyson, M.D.*, Hospital Lecturer on Pathological Anatomy in the University of Pennsylvania, etc., etc., with a plate and numerous illustrations. Philadelphia: Lindsay & Blakiston. 1875.

Dr. Tyson's name alone would be a guarantee of the excellence of a book. In this case, a careful examination fully justifies the assumption. The practical man will find in this little book all that is absolutely necessary for him to know, in order to utilize fully the data supplied by the urine, in the formation of accurate diagnoses, and will find it, moreover, presented in a condensed form, free from useless and irrelevant verbiage which sometimes encumbers more pretentious and elaborate treatises. A practitioner can hardly afford to dispense with this little manual, unless he has some equally good substitute, which would be difficult to find—a better we are sure he cannot find. H.

CLINICAL LECTURES ON DISEASES OF THE URINARY ORGANS. Delivered at University College Hospital by *Sir Henry Thompson*, Surgeon Extraordinary to His Majesty the King of the Belgians, Professor of Clinical Surgery, and Surgeon to the University College Hospital. Second American from the Third and Revised English Edition, with Illustrations. Philadelphia: Henry C. Lea. 1874.

Everything within the range of the pathology of the urinary organs, coming from the pen of Sir Henry Thompson, possesses interest and value. The volume before us comprises fourteen lectures essentially practical in their character, written clearly and concisely. The subjects are treated with the precision of a teacher, and the authority of a master, of one who has learned his art, and who never subordinates practical experience to theory. His instructions for passing the catheter or bougie are illustrative of this: "I pity the patient who has a solid instrument thrust into his body by a knowing man at anatomy," indicating thereby what is doubtless perfectly true, the necessity of paying more attention to the peculiarities of each individual urethra than to arbitrary anatomical rules.

For the treatment of stricture, the author gives the preference to internal incision, after describing fully and discussing fairly the processes of dilatation, gradual and forcible, and Symes', or the operation of external urethrotomy.

For the performance of the operation, too, he gives the preference to the instrument of Civiale, on account of its simplicity, as "far better than a machine which makes a certain incision mechanically, and is not controled or guided by the intelligence of the surgeon."

The chapters on prostatic disease are interesting. The distinction between the two forms, occurring at different periods of life, inflammatory enlargement, prostatitis, frequently observed in young subjects, and hypertrophy occurring in old age, is clearly drawn, each class of cases being well defined. The latter form of the disease the author declares to be by no means so frequent as has hitherto been asserted by writers, and generally believed

by the profession at large. Out of two hundred persons dying beyond the age of fifty-five years in the Marylebone Infirmary, and dissected very carefully by himself, he found but three in one hundred to be the subjects of prostatic enlargement. He assumes, therefore, that one in ten would be a large estimate for the cases of disease of this organ in persons beyond the age of sixty years, which opinion will doubtless be sustained by the observation of the vast majority of his readers in this country at least.

In referring to the condition of the bladder as associated with stricture the author wishes "to render this sentence in the largest capitals," that "INVOLUNTARY MICTURITION INDICATES RETENTION AND NOT INCONTINENCE." The chapter upon Extravasation of Urine and Urinary Fistulæ, is written instructively and in a very hopeful spirit concerning the results of operative procedures in these distressing conditions.

With the subject of calculi and their removal, Sir Henry Thompson's name has been so thoroughly and universally identified, as to make whatever he may have to say upon it, of peculiar interest, and this assumption will only be justified by careful study of the chapter devoted to Lithotrity and Lithotomy. For the former operation, in the performance of which he has become so widely celebrated, his preference is indicated by the emphatic declaration, "if the stone is discovered when sufficiently small, *it can always be crushed with an almost* CERTAIN CHANCE *of success;*" "so that lithotomy for adults must at some day disappear, except for cases which have been neglected by patients themselves, or have been overlooked by the medical attendant."

Of the subject of Lithotomy there is a very interesting historical as well as surgical sketch which will well repay the reader.

One of the chief merits of this book is its brevity; what the author has to say is said well and concisely, the volume of less than two hundred pages containing

more valuable matter than in many instances would be diluted with five or six hundred of words. The paper, type and mechanical work are better even than Mr. Lea's average standard, which is a high one. H.

EXAMINATON OF THE URINE. By *Geo. B. Fowler, M.D.*, Examiner in Physiology, College of Physicians and Surgeons, New York; Fellow of New York Academy of Medicine; Member of N. Y. County Medical Society, etc. New York: D. Appleton & Company. 1874.

"This book is intended simply as a Guide," says the author in his preface, and we are quite sure that the student who will make it his "guide" and follow its lead step by step through its exposition of the various conditions of urine, normal and morbid, and the means for their detection, will feel satisfied that his time has been profitably spent in studying Dr. Fowler's manual of eighty pages. H.

THE DRIFT OF MENTAL PHILOSOPHY. An Essay. By *D. A. Gorton, M.D.* Revised Edition. Philadelphia: J. B. Lippencott & Co. 1875.

This is a rehash of the "olla podrida" which was served up a year ago under the title "Principles of Mental Hygiene," and noticed somewhat at length in this JOURNAL. Of the present (very unsuccessful) Essay we will borrow the criticism—truly Delphic—of the New York Medical Journal, "the work demands careful reading." H.

INFLAMMATION OF THE LUNGS: TUBERCULOSIS AND CONSUMPTION. Twelve Lectures. By *Dr. Ludwig Buhl*, Professor of Pathological Anatomy and General Pathology in the University of Munich, etc., etc., etc. Translated by permission from the Second German Edition, by Matthew D. Mann, M.D., and Samuel B. St. John, M.D. New York: G. P. Putnam's Sons. 1874.

In view of the great interest awakened in the subjects consumption and tuberculosis and the differential diagnosis, by the investigations of Rindfleisch, Niemeyer,

Schultze and others, these letters of Prof. Buhl must be read with peculiar pleasure, as the opinions of a pioneer in this field of research, whose opportunities for observation have been singularly favorable. The careful student will detect in the results of the author's investigations a striking similarity in the pathological processes occurring in the lungs to those observed by Johnson and others in the kidneys, and an illustration of the simplicity and comprehension of pathological — and, *a fortiori*, physiological—processes when isolated from incidental and considered only in relation to their essential factors. No one desirous to keep up with the advance of pulmonary pathology can afford to neglect this little book, and their thanks are especially due to the translators who have put the work so skillfully in the English garb for their use. H.

THE MEDICAL USES OF ALCOHOL; AND STIMULANTS FOR WOMEN. By *James Edmunds, M.D.*, Member of the Royal College of Physicians of London; Member of the Royal College of Surgeons of London; late Senior Physician to British Lying-in Hospital; Senior Physician to the London Temperance Hospital. New York: National Temperance Society and Publication House. 1874.

A temperance tract having for its essential characteristic, intemperance advocating temperance in intemperate language and appealing to reason by the shallowest sophistry—denouncing medical dogmata in opinions essentially dogmatic. This little book will, like millions of tons of its fellows, fail to accomplish its object for these very reasons. *Falsus in uno falsus in omnibus* will ever be the judgment of the human mind concerning books as well as men and principles.

BOOKS RECEIVED.

THE PATHOLOGICAL SIGNIFICANCE OF NEMATODE ENTOZOA. By *T. R. Lewis, M.B.*, Staff Surgeon to Her Majesty's British Forces, (on special duty), attached to the Sanitary Commissioner with the Government of India. Calcutta: Office of the Superintendent of Government Printing. 1874.

THE HISTOLOGY AND HISTO-CHEMISTRY OF MAN: a Treatise on the Elements of Composition and Structure of the Human Body, by *Heinrich Frey*, Professor of Medicine in Zurich. Translated from the Fourth German Edition, by Arthur E. J. Barker, Surgeon to the City of Dublin Hospital; Demonstrator of Anatomy, Royal College of Surgeons, Ireland; Visiting Surgeon, Convalescent Home, Stillorgan; and revised by the author. With six hundred and eight Engravings on Wood. New York: D. Appleton & Co. 1875.

FUNCTIONAL DERANGEMENTS OF THE LIVER, being the Croonian Lectures delivered at the Royal College of Physicians in March, 1874, by *Charles Murchison, M.D., LL.D., F.R.S.*, Fellow of the Royal College of Physicians; Physician and Lecturer on the Principles and Practice of Medicine, St. Thomas Hospital; Vice-President and Consulting Physician, London Fever Hospital; Formerly Physician and Lecturer on Medicine, Middlesex Hospital, and on the Medical Staff of H. M.'s Bengal Army. New York: William Wood & Co. 1875.

LECTURES ON THE DISEASES OF THE RESPIRATORY ORGANS, HEART AND KIDNEYS. By *Alfred Loomis*, Professor of Pathology and Practical Medicine in the Medical Department of the University of the City of New York; Consulting Physician to the Charity Hospital, etc., etc. New York: William Wood & Co. 1875.

A REPORT OF MICROSCOPICAL AND PHYSIOLOGICAL RESEARCHES into the Nature of the Agent or Agents Producing Cholera, (second series). By *T. R. Lewis, M.B.*, and *D. D. Cunningham, M.B.*, Surgeons, H. M. Indian Medical Service, (on special duty), attached to the Sanitary Commissioner with the Government of India. Calcutta: Office of the Superintendent of Government Printing. 1874.

CYCLOPÆDIA OF THE PRACTICE OF MEDICINE. Edited by *Dr. H. Von Ziemssen*, Professor of Clinical Medicine in Munich, Bavaria. Vol. II, Acute Infectious Diseases. By Prof. Thomas, of Leipzig; Dr. Curschmann, of Berlin; Dr. Leulzer, of Berlin; Prof. Hertz, of Amsterdam, and Prof. Von Ziemssen, of Munich. Translated by James C. White, M.D., and Edward Nigglesworth, Jr., M.D., of Boston; Edward W. Schauffler, M.D., of Kansas City; and A. Brayton Hall, M.D., J. Haven Emerson, M.D., George H. Fox, M.D., Edward Frankel, M.D., and John C. Jay, Jr., M.D., of New York. Albert H. Buck, M.D., of New York, Editor of American Edition. New York: Wm. Wood & Co. 1875.

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SCLERITIS SYPHILITICA: its Pathology, Course and Treatment. By *Fred. Sturges, M.D.*, one of the Surgeons to the Charity Hospital, Blackwell's Island, Lecturer on Venereal in the Medical Department of the University of New York, etc. New York: G. P. Putnam's Sons. 1875.

A RETROSPECT OF THE STRUGGLES AND TRIUMPHS OF OVARIOTOMY IN PHILADELPHIA, with some Additional Remarks on Allied Subjects: The Annual Address before the Philadelphia County Medical Society. By *Washington L. Atlee, M.D.*, Retiring President. Delivered Feb. 1, 1875. Published by order of the Society. Philadelphia. 1875.

REPORT OF THE VACCINE DEPARTMENT of the New York Dispensary for the year 1874. By *Frank P. Foster, M.D.*, Director of the Vaccine Department. New York. 1875.

RESEARCHES INTO THE ACTION OF MERCURY, PODOPHYLLIN AND TARAXACUM ON THE BILIARY SECRETION, being the Report of the Edinburgh Committee of the British Association. By *John Hughes Bennett, M.D., F.R.S.E.*, Chairman and Reporter. Second Edition and Appendix. Chicago: C. H. Garrison, M.D. 1874.

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CATALOGUE of the Trustees, Professors and Students of the Jefferson Medical College of Philadelphia. Session 1874–5. Also,

GRADUATES of the Jefferson Medical College of Philadelphia. March, 1875.

## JOURNALS RECEIVED.

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The Atlanta Medical and Surgical Journal—Vol. xii, Nos. 11, 12.
The American Practitioner—Vol. ii, No. 63.
The Boston Medical and Surgical Journal—Vol. xcii, Nos. 7, 8, 9, 10, 11.
The Canada Medical and Surgical Journal—Vol. iii, Nos. 8, 9.
The Clinic, Cincinnati—Vol. viii, Nos. 8, 9, 10, 11, 12.

The Cincinnati Lancet and Observer—Vol. xviii, No. 3.
The Canada Medical Record—Vol. iii, No. 7.
The Detroit Review of Medicine and Pharmacy—Vol. x, No. 3.
The Eclectic Medical Journal—Vol. xxxv, No. 3.
The Indiana Journal of Medicine—Vol. i, No. 11.
The Journal of Materia Medica—Vol. xiv, No. 2.
The Kansas City Medical Journal—Vol. v, No. 1.
The London Lancet—February, 1875.
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The Medical Times, Philadelphia—Vol. v, Nos. 173, 174, 175, 176, 177.
The Medical Herald, Leavenworth—Vol. viii, Nos. 8, 9.
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The Medical Examiner, Chicago—Vol. xvi, No. 5.
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The Missouri Clinical Record—Vol. i, No. 12.
The Medical Eclectic—Vol. ii, No. 2.
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The Nashville Journal of Medicine and Surgery—Vol. xv, No. 3.
The New York Medical Journal—Vol. xxi, No. 3.
The New Orleans Medical and Surgical Journal—Vol. ii, No. 5.
The Ohio Medical and Surgical Reporter—Vol. ix, No. 2.
The Pacific Medical and Surgical Journal—Vol. xvi, Nos. 9, 10.
Le Progres Medical, 3c Annee—Nos. 1, 2, 3, 4, 5.
The Physician and Pharmacist—Vol. viii, No. 1.
The Practitioner, London—No. lxxx.
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The Peninsular Journal of Medicine—Vol. xi, No. 3.
The Richmond and Louisville Medical and Surgical Journal—Vol. xix, No. 23.
El Repertorio Jalisciense, Guadalajara—Tomo i, No. 7, 8.
The Southern Medical Record—Vol. v, No. 1.
The St. Louis Medical and Surgical Journal—Vol. xii, Nos. 2, 3.
The Technologist—Vol. vi, No. 2.
The United States Medical Investigator—Vol., Nos. 1, 4.
The Virginia Medical Monthly—Vol. i, No. 12.

# Editorial.

***"Bills of Interest to the Medical Profession."***

Under this caption, the Philadelphia *Medical Times* editorially directs attention to three "Bills" now pending before the Legislature of the State of Pennsylvania. Of the first, "An Act to Regulate the Practice of Medicine, Surgery and Obstetrics in the Commonwealth of Pennsylvania," we will say, in the language of our excellent cotemporary, "we think this bill a very good one, although, of course, we should like to have seen it go further," so as not only to "do away with two great evils —practicing medicine without a diploma, and peripatetic quackery," but also to accomplish the organization of a "State Board of Examiners, before whom every aspirant for practice should appear." We should like very much to see statutes enacted in this State which should comprehend such desirable objects.

"The second act," however, is that which has more especially attracted our attention, and the strong resemblance in its features to one of a similar character which was urged upon the Legislature of this State at its last session, and to another, also, which was urged upon Congress at its last session, in the guise of a National Board of Health, suggests a common paternity for each and all of them. The Philadelphia *Medical Times* is generally acute of perception and merciless to frauds of all sorts, and if, after a critical analysis of this "Bill," a humbug and fraud is not detected, then we will acknowledge that we have mistaken the "foot-prints in the sand," and that it is not *our* African hidden in our neighbor's wood-pile, but one of his own, who closely resembles him. There is a German proverb: „Wo Rauch iſt, da iſt auch Feuer,"—henee our suspicions.

This JOURNAL, under the caption, "An Asylum for Imbeciles," directed public attention to the true gist of

this same "Bill," for we shall be much surprised if it be not the same Bill, or an "artist's proof" of it, as presented to the Legislature of the State of Illinois, showing what an admirable contrivance was therein devised for the creation of a sinecure. The essence of the whole matter being a "Secretary," endowed with a position of legal—if not of medical—respectability, a modicum of superficial acquirements to dazzle country members, a panoply of impenetrable brass, and "sine qua non"—"three thousand dollars a year." Does the State of Pennsylvania contain "five physicians" fitted to fill the position designed for them by this "Bill," willing to serve without salary? If so, she can boast of five true philanthropists, ready to sacrifice themselves for the—support of the Secretary. Has the State of Pennsylvania a physician fitted, by the possession of great administrative ability, a liberal education, profound and extensive scientific attainments, studious and laborious habits of life, to fulfill the important duties which must devolve upon the Secretary of the State Board of Health of that vast Commonwealth, willing to sacrifice the splendid professional position and lucrative practice which such qualifications always command, for the paltry stipend of three thousand dollars? If so, she must be credited with another philanthropist, and may rejoice in her possessions over her sister States—certainly over ours, who have none such. We had one once, but he has departed, and the places which knew him now know him no more, and we know not whither he has gone, unless the Commonwealth of Pennsylvania has borrowed him, or he has vanished in "smoke."

To our friend the *Times* we are under many obligations for its skillful detection and brave denunciation of many frauds of many kinds, and we would willingly cancel some of them by a word of caution. Look well to your "Bills" before they become laws, or you may find too late that you have permitted a parasite, in "Secretary," to secure a legal hold upon the body pro-

fessional, and attract to it as much odium as would the presence of a parasite of another kind upon the body personal. H.

***Medical Education and Medical Legislation.***

The period of the annual recurrence of Medical College Commencements is always the occasion for diatribes, in medical and secular journals, upon the defects of "the Modern System of Medical Education," the "low standard of preliminary acquirements," the "superficial character of the instruction imparted to medical students," and various other disadvantages which the American, and especially the Western, medical student is supposed to sustain, in comparison with his more fortunate compeer on the other side of the ocean. The stereotyped facetiæ about "crops of sawbones," "licenses to kill," etc., occupy their usual places in the "funny columns" of the press. The critics are not, however, altogether merciless, for while indicating the faults they are charitable enough to designate the remedy, and this they find in that great panacea of the untutored mind, "the law." The grand catholicon, under whose magical influence all these evils are to disappear, is "Medical Legislation." Teachers are to be made competent and conscientious, students instructed and accomplished, physicians learned and skillful, by acts of legislature.

Lord Thurlow said that an "act of Parliament could not be drawn through which he could not drive a coach and horses." Might not a medical student be driven through an "Act of Legislature"? Legislation, then, appears to be, in the eyes of the reformers, the means, and the only means, by which the medical profession is to be brought "up to the level of the legal and clerical," with each of which it is now most discreditably compared.

Having had much better opportunities for judging this question than the majority at least of the critics and reformers, from both the outside and inside point of view,

we will take the liberty to examine the subject a little more closely. The relative qualifications of the three so-called learned professions may be compared in a very few words. The first, the theologians, may be left to themselves, as of the three hundred and sixty-five (or seven, we forget which,) sects, no one can be found unwilling to condemn all the others of gross ignorance, and with some measure of justice, as but one can be right. The qualifications of the members of the legal profession are exemplified in the almost impossibility of securing the conviction of many criminals of whose guilt there is a moral certainty, Moreover, the attenuation of an estate emerged from chancery is aptly comparable to the emaciation of a patient convalescent from a wasting disease ; and while it is true in this and some other communities, that the legal profession opens more numerous collateral avenues to wealth, into which many of its members have entered, than the medical, it is equally true that, in regard to professional education, general culture, and practical skill, the members of the latter are fully equal to those of the former, class for class, rank for rank. The comparison is confidently challenged, without fear of the result.

To the self-styled critics, those of them at least who are members of a profession which they seem anxious to decry, a question is in order. Is the low standard of professional education which they deplore that to which they themselves were brought, or that to which the student of to-day must conform ?

We assert boldly, that were the great mass of general practitioners required to pass the examination to which medical students are now subjected, and which is yearly becoming more rigid, the percentage of rejections would be far greater than in an average class of candidates for graduation in many of the medical colleges. Don't condemn the graduate of to-day until you have measured your acquirements with his. All that is old is not venerable. There are antique as well as modern shams, and the "....laudator temporis acti" lived too in the days of Horace.

In the opinion of many, these evils may all be effectually remedied by the establishment of a State Board of Examiners, whose certificate should be not only *prima facie* evidence, but proof of the competency of medical men. The idea is plausible and superficially captivating, but will it justify our endorsement when critically analyzed? In the first place, we fail to perceive in what respect the certificate of a State Board of Examiners will be more positive evidence of competency than the diploma of the faculty of a college, as the latter would be, in all probability, the larger body of the two, and equal at least to the former in professional standing, being composed of physicians deemed by their colleagues—the most competent tribunal—peculiarly fitted for their positions.

Faculties of medical colleges are always, to say the least, up to the average of their profession in point of ability and professional acquirement, and usually above it, never below. Can the same be said of "Boards" consisting in whole or in part of medical men?

How could these Boards be appointed? by the Governor? that is to say, by personal influence; by the Legislature? that is to say, by political influence; or by the people? that is to say, by popular influence. Than the first of these there could hardly be a more unreliable method of choosing the fittest, except the second and third, and the same might be said of each of the other methods respectively. The Governor would appoint his own physician and his friends, or suffer an imputation upon his own judgment. The Legislature would appoint those having most political influence, in the acquisition of which no man ever became an accomplished physician. And the people would elect the most popular doctors, who would generally be found to have cultivated popularity, to the exclusion of science.

Considered in its economical aspects, the scheme presents features demanding careful scrutiny in these days of high taxes and public and private indebtedness. A "State Board" of Medical Examiners must consist of at

least one expert in each department of medicine, as now taught, with provision for the addition of others as they may become necessary for the advancement of science, *i. e.*, in Anatomy, Chemistry—organic and inorganic—Materia Medica and Medical Botany, Physiology, Pathology, Surgery, Obstetrics and Gynæcology, Practical Medicine in its various branches, Microscopy, Electrology, etc. It would be difficult to constitute a Board of less than ten members expert in all these departments of medical science and art. This is only what every medical college aims to accomplish—and, it would appear, with a certain measure of success—for its own students. Moreover, this Board must occupy itself exclusively with its duties and the preparation for them, and must be paid a minimum of ten thousand dollars for each of its members. Add to this fifty per cent. for incidental expenses, and we have an item of one hundred and fifty thousand dollars to be added to the annual taxes of the people of the State. How will this view of the picture please the people who clamor so loudly for "medical reform"?

In this country, for the last ninety-nine years, we have been playing the game Republic, in which "we make believe" that every player has equal rights to "life, liberty, and the pursuit of happiness." It is true the game is nearly played out, but some of us are not yet tired, and want to "play on till dark;" and while others may clamor to give up and play a new game, perhaps "Monarchy," or "Military Dictatorship," or something else, we insist upon the maintenance of the original conditions. Some of us find our pursuit of happiness in the care of bodies, some in the care of souls, and some in the care of estates. Because one may not save some vile body from the grave by arts of which people know little, shall he be forbidden by the law from trying to save others? Because one may not save some viler souls from hell by arts of which the people know less, shall he be forbidden by the law from trying to point out the other road, although his knowledge thereof be none of the

clearest? Because one fails to convince an unimpressible jury that the blood-stained fingers of his client in the dock are whiter than the driven snow, and thus save his neck from the gallows, shall he be forbidden by the law to try to pluck its legitimate fruit from that too barren tree?

This is "paternalism" run mad. If the State requires an arbitrary standard of proficiency in one rank of life, it must exact it similarly in all. There must be a State Board for the examination of clergymen, doctors, lawyers, apothecaries, grocers, liquor dealers, horse-shoers, plumbers, sewer builders, and night scavengers; for they and many more are directly instrumental in the preservation of public—and private—health.

Again, if the State exacts an arbitrary standard of professional proficiency, it is obligatory upon the State to provide the means and appliances whereby it may be reached, otherwise the State becomes an irresponsible tyranny.

This involves the establishment of a system of public education, comprehending every branch of human knowledge, which must be free to all, since all are compelled to accept its provisions. Have the reformers ever counted the cost of so comprehensive a scheme?

We have seen several of these projects for the establishment of "State Boards," and—while we have no desire or intention to stigmatize all as such—these were all nothing more nor less than contrivances by which somebody, unable or unwilling, or both, to attain professional position by hard work, sought to acquire some temporary notoriety, a small stipend, and "the chances," at the expense of the State.

In conclusion, we assert our most thorough sympathy with those who desire the elevation of the standard of professional education, but cannot endorse all the utopian schemes which have been devised for the accomplishment, believing the only reasonable plan—which must eventually succeed—to be the silent force of example.

Let every critic and reformer study diligently and faithfully to become truly expert in some department of his profession, and all who come within the range of his influence will be stimulated to follow his example—and so the standard of medical education will be raised *tuto, cito, et jucunde.* H.

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## Died.

Dr. JOSHUA RILEY, of Georgetown, D. C., died recently of angina pectoris, aged 75 years. He graduated at the University of Maryland in 1824, soon after which he commenced the practice of medicine, and located in Georgetown. From 1844 to 1859 he occupied the chair of Materia Medica, in the Medical Department of Columbian College, and for many years was President of the Medical Association of the District of Columbia. At the recent meeting of this Society, appropriate resolutions were passed, and remarks were made by Drs. Grafton Tyler, L. Mackall, Jr., Armistead Peter, Noble Young, J. F. May, and Lieberman.—*N. Y. Medical Record*, March 20, 1875.

We transcribe the above notice from the pages of the *Record*, in order that we may add thereto our tribute of respect to the memory of a noble old man, an honor to his profession and to his kind.

It has been our good fortune to enjoy for many years the acquaintance of Dr. Riley, and, during three or four of these, to listen to his lectures from his Chair of Materia Medica, and always to find in him the judicious physician, the conscientious instructor, the kind and sympathizing friend.

Few men have ever lived lives so blameless as his, and few have gone down to their graves leaving records as stainless. He was the friend of all, the enemy of none. By his sterling integrity of character he won the respect and confidence, and by his kindness and true philanthropy, the love and affection of all who knew him.

He was, in an especial manner, the student's friend; as instructor, faithful; as counsellor, prompt, sagacious and encouraging.

Two and twenty years, crowded with the changes and vicissitudes of a more than usually eventful life, have passed, since we received his hearty congratulations and kind farewell upon launching our bark upon the broad ocean of professional life, but many more years must glide into the abyss of eternity, and the recollections of his many virtues fade from the "written tablet of the brain," ere we cease to do honor to the memory of a revered preceptor, a well beloved friend. "May he rest in peace!" H.

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BOARD OF HEALTH, OFFICE SANITARY SUPT.
CHICAGO, March, 1875.

*Dr. W. Hay, Editor Journal:*

DEAR SIR—You will see by the following mortality report that the number of deaths have decreased one hundred and twenty-two compared with last month, and twenty-three compared with the corresponding month of last year. At present, we are comparatively free from small-pox, the few cases in the city are of a mild type; we have had but three deaths from this cause since July last. At present a large number of cases of scarlatina and measles are present in the city, but as a rule are very light, but few deaths having occurred from them. I think we can congratulate ourselves on the healthy condition of the city—the rate for last month was only 11.22 per one thousand inhabitants.

Respectfully,

BEN. C. MILLER, *San. Supt.*

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***Chicago Mortality Report for February, 1875.*** Reported by Dr. BEN. C. MILLER, Sanitary Superintendent.

| | | | |
|---|---|---|---|
| Accident, crushed | 4 | Apoplexy | 4 |
| " by fall | 1 | Asthma | 2 |
| " by railroad | 2 | Ascites | 1 |
| " by scalding | 1 | Atelectasis pulmonum | 1 |
| Abscesses | 1 | Bowels, intussusception of | 1 |
| " lumbar | 1 | Brain, congestion of | 6 |
| Anæmia | 4 | " inflammation of | 3 |
| Angina pectoris | 1 | Bronchitis | 10 |
| " gangrenous | 1 | " capillary | 9 |

| | |
|---|---|
| Cancer | 1 |
| " of breast | 1 |
| " of liver | 1 |
| " of rectum | 1 |
| " of stomach | 2 |
| " of uterus | 1 |
| Consumption | 55 |
| Convulsions | 66 |
| Croup | 7 |
| " membranous | 2 |
| Cyanosis | 2 |
| Cynanche trachealis | 1 |
| Debility, general | 4 |
| Delirium tremens | 1 |
| Diarrhœa | 2 |
| " chronic | 1 |
| Diphtheria | 7 |
| Dropsy, general | 3 |
| " pericardiac | 1 |
| Dysentery | 2 |
| Dyspepsia | 1 |
| Eczema | 1 |
| Endo-carditis | 1 |
| Enteritis | 11 |
| Entero-colitis | 1 |
| Exposure | 1 |
| Erysipelas | 5 |
| Exhaustion | 1 |
| Fever, puerperal | 8 |
| " intermittent | 1 |
| " remittent | 2 |
| " scarlet | 7 |
| " typhoid | 8 |
| Frost bites | 2 |
| Gangrene | 1 |
| Gastritis | 2 |
| Gastro-enteritis | 2 |
| Hæmorrhagica purpura | 1 |
| Heart, disease of | 1 |
| " dropsy of | 2 |
| " organic disease of | 2 |
| " hypertrophy of | 1 |
| " rheumatism of | 3 |
| Heart, valvular disease of | 4 |
| Hydrocephalus | 6 |
| Inanition | 8 |
| Injury at birth | 1 |
| Kidneys, disease of | 1 |
| " Bright's disease of | 2 |
| Laryngitis | 2 |
| Larynx, inflammation of | 1 |
| Liver, hypertrophy of | 1 |
| Lungs, congestion of | 10 |
| " paralysis of | 1 |
| Malformation | 1 |
| Measles | 13 |
| Meningitis | 13 |
| " cerebro-spinal | 5 |
| " tubercular | 1 |
| Old age | 15 |
| Paralysis | 1 |
| Pericarditis | 1 |
| Peritonitis | 5 |
| " puerperal | 1 |
| Pneumonia | 47 |
| " typhoid | 1 |
| Pleurisy | 1 |
| Pyæmia | 2 |
| Rheumatism | 2 |
| Septicæmia | 1 |
| Small-Pox | 2 |
| Spina bifida | 1 |
| Spine, disease of | 1 |
| " paralysis of | 1 |
| Suicide, shooting | 1 |
| " cutting throat | 1 |
| Syphilis | 2 |
| Tabes mesenterica | 6 |
| Teething | 1 |
| Tetanus | 2 |
| Trismus | 1 |
| Tumor on neck | 1 |
| Toxæmia | 1 |
| Whooping cough | 2 |
| Total | 449 |

Premature births, 8; Still births, 66. Total, 74.

COMPARISON.

Deaths in February, 1875, 449; in January, 1875, 571. Decrease, 122.
Deaths in February, 1874, 472. Decrease, 23.

AGES.

| | |
|---|---|
| Under one year | 155 |
| One year to two | 56 |
| Two years to three | 14 |
| Three " " four | 9 |
| Four " " five | 7 |
| Five " " ten | 20 |
| Ten " " twenty | 17 |
| Twenty " " thirty | 37 |
| Thirty years to forty | 37 |
| Forty " " fifty | 31 |
| Fifty " " sixty | 26 |
| Sixty " " seventy | 21 |
| Seventy " " eighty | 10 |
| Eighty " " ninety | 7 |
| Ninety " " one hundred | 1 |
| One hundred and upwards | 1 |
| Total | 449 |

| | | | | | |
|---|---|---|---|---|---|
| White | 438 | Males | 240 | Married | 133 |
| Colored | 11 | Females | 209 | Single | 316 |
| Total | 449 | Total | 449 | Total | 449 |

NATIVITIES.

| | | | | | |
|---|---|---|---|---|---|
| Belgium | 2 | England | 3 | Poland 1—Russia 1 | 2 |
| Bohemia | 5 | France | 1 | Scotland | 4 |
| Canada | 4 | Germany | 45 | Sweden | 7 |
| Native—Chicago | 66 | Holland | 3 | Switzerland | 2 |
| Foreign, " | 161 | Ireland | 39 | Wales | 1 |
| U. States, other parts | 87 | Italy | 1 | Unknown | 4 |
| Denmark | 2 | Norway | 10 | Total | 449 |

Deaths daily, 16. Mean thermometer, 15°. Rain fall, 1.84 inches.

MORTALITY BY WARDS.

| Wards. | No. Deaths. | Pop. in 1874. | Percentage. |
|---|---|---|---|
| 1 | 3 | 5,725 | one death in 1,908 |
| 2 | 6 | 4,830 | " " 805 |
| 3 | 19 | 14,861 | " " 782 |
| 4 | 12 | 15,361 | " " 1,280 |
| 5 | 25 | 20,078 | " " 803 |
| 6 | 52 | 35,916 | " " 691 |
| 7 | 31 | 31,722 | " " 1,023 |
| 8 | 35 | 29,143 | " " 832 |
| 9 | 26 | 31,654 | " " 1,217 |
| 10 | 6 | 17,385 | " " 2,897 |
| 11 | 11 | 14,022 | " " 1,275 |
| 12 | 14 | 16,792 | " " 1,199 |
| 13 | 14 | 17,892 | " " 1,278 |
| 14 | 15 | 16,720 | " " 1,115 |
| 15 | 43 | 45,545 | " " 1,059 |
| 16 | 25 | 21,922 | " " 877 |
| 17 | 23 | 20,777 | " " 903 |
| 18 | 26 | 21,392 | " " 823 |
| 19 | 6 | 4,677 | " " 779 |
| 20 | 4 | 8,995 | " " 2,249 |
| | 396 | Ratio of deaths to population in 1874, one death in 880 3-5. | |

| | | | |
|---|---|---|---|
| No. deaths in Wards | 396 | Mercy Hospital | 1 |
| Accidents | 8 | Protestant Orphan Asylum | 3 |
| County Hospital | 14 | St. Luke's Hospital | 3 |
| Foundlings' Home | 16 | Suicides | 2 |
| Hospital Alexian Bros. | 3 | | |
| Hahneman Hospital | 2 | Total | 449 |
| Home for Friendless | 1 | | |

## LIST OF ADVERTISERS.

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ANTHONY, E. & H. T. & CO., Albums and Stereoscopes.

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PLANTEN & SON, Capsules.

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SARGENT, E. H., Surgical Instruments, etc.

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"The *Eucalyptus globulus* belongs to the Natural Order *Myrtaceæ*, which furnishes the clove (*Caryophyllus aromaticus*), oil of cajeput (*Melaleuca minor*), and the pimento (*Eugenia Pimenta*). It is one of the noblest representatives of a genus that contains upwards of a hundred species. It is often gigantic in size, and is impregnated throughout with an aromatic substance, which is present, however, in smaller proportions in the wood and the bark than in the flowers and the leaves. The tree is easily acclimatized in the southern provinces of France, Corsica, Algiers and Spain, being known in the last named country under the popular name of the fever tree. * * *

PROPERTIES.—Moderate doses cause a disturbance of the digestion, sometimes succeeded by a diarrhœa in which the motions, like the eructations, recall the smell of the eucalyptus. Large doses sometimes cause headache, excitement and fever, with accelerated respiration, thirst, sickness and generally sleepiness; upon anæmic persons, however, it acts as a narcotic. The symptoms rarely last more than a few hours.

"In Australia the *Eucalyptus globulus* is the popular remedy for fevers, and in Europe it has been used successfully in the treatment of diseases prevalent in marshy districts. M. Gubler quotes the testimony of several medical practitioners, who say that it produces marvellous results in cases of intermittent fevers, especially obstinate ones where sulphate of quinine has been used without effect. * * —*Phar. Jour. and Trans., March* 2, 1872.

It has been recommended for, and used with marked success as a disinfectant in dressing wounds ulcers, purulent catarrhal affections of the urethra and vagina, fetid breadth, and as an astringent to harden spongy and bleeding gums.

THERAPEUTICAL APPLICATIONS OF EUCALYPTUS GLOBULUS.—At the last meeting of the San Francisco Medical Society, Dr. Pignedupuytren said he had used the eucalyptus in the French Hospital for a year, during which time many interesting results had been noted. In March last, a hundred of the small trees had been planted on the Hospital grounds. They had now reached the height of seven feet. He related the following cases:

"A man had arteritis of the leg, succeeded by gangrene, which extended so high up as to render amputation impossible. In two weeks a large ulcer resulted, whose odor was horribly fetid. Everything in turn was employed to destroy this odor, to no effect. At last a decoction of eucalyptus was resorted to, and, without exaggeration, in five minutes all fetor had disappeared. The decoction continued to be used with the same effect until death occurred, two or three weeks subsequently.

"Another man, who had been under treatment in the Hospital for two months, with extensive, deep ulcer from varix, of a year's duration, had the decoction applied to the ulcer three times a day, with remarkable effect. In five or six days the ulcer was entirely covered with healthy granulations, and in a month it was entirely well.

"A woman had been troubled for many months with an ulcer around the orifice of the urethra. It was cauterized five times with no result. After twelve days' use of the decoction of eucalyptus, washing thrice daily, it was well.

"Four cases of syphilitic chancres healed under the eucalyptus dressing in five or six days, without other treatment. These were very recent cases, or constitutional treatment would have been resorted to.

"He had but one case of intermittent fever to report. This had proved rebellious to quinia, and also to arsenic, which latter had been administered for two weeks. A three weeks' course of the eucalyptus cured entirely.

"So numerous were the cases of bronchitis cured with the drug, that it was hardly worth while to mention them." * * * —*Pacific Medical Journal.*

EUCALYPTUS GLOBULUS.—Dr. Wooster, M. D., of San Francisco, California, submits a report of 135 cases of various diseases treated exclusively with fluid extract of eucalyptus globulus. This preparation was made by Dr. Coleman, Resident Physician at the United States Marine Hospital.

Remittent fever: cases treated, 5; cured, 5. Intermittent fever: cases treated, 19; cured, 19. Typhoid fever: cases treated, 9; cured, 9. Nephritis: cases treated, 4; cured, 3; improved, 1. Diuresis: cases treated, 10; cured, 7; improved, Incontinence of urin: cases treated, 3; cured, 3. Vesical catarrh: cases treated, 27; cured, 25; improved, 2. Blennorrhagia: cases treated, 13; cured, 10; improved, 3. Valvular disease of heart: cases treated, 7; cured, 0; improved, 7. Dysentery: cases treated, 4; cured, 3; improved, 1. Chronic diarrhœa: cases treated, 13; cured, 9; improved, 4. Gonorrhœa (syphilitic): cases treated, 15; cured, 10; improved, 5. Dropsy: cases treated, 6; cured, 3; improved, 3. Of the whole number of cases, 106 were cured and 29 improved.

At a recent meeting of the San Francisco Medical Society, Dr. Stout exhibited an ingeniou apparatus for the inhalation of medicated vapors. The medicated liquid is kept boiling by a spirit-lamp and the vapor conducted through a tube. He had used the *eucalyptus* in this way, employing the tincture in water. It was preferable to the common atomizer, because of the warm vapor, which is not only medicinal in itself, but promotive of absorption. The eucalyptus he had found very beneficial in bronchial and pulmonic affections.

Dr. Pignedupuytren testified to the virtues of the remedy, which had been fully tested by himself and Dr. D. Oliveira, in the French Hospital. It had been found highly serviceable in affections of the larynx and of mucous membrane in general; also as a tonic. In France it was much used as a febrifuge, and by some considered a substitute for cinchona. The leaves growing near the trunk of the tree were the most aromatic. A large number of the trees had been planted around the French Hospital, for sanitary and medicinal purposes. The leaves, in drying, emitted a large amount of balsamic exhalations, capable of causing headache in persons much exposed to them, as he had experienced in his own house.—*Pacific Medical and Surgical Journal.*

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Prepared with glycerine, for cases where it is necessary to prescribe in solution, or with the addition of other agents.

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# Phosphorus as a Remedy for Neuralgia.

The following table is taken from a valuable paper contributed to the "*London Practitioner*" by Prof. J. Ashburton Thompson, on the use of Phosphorus for the above-named complaint, large doses being employed by him, (1-5 gr. or more) and with marvelous success. He records 18 cases, as will be seen by table below, and arranges them in three classes—Acute Primary Attacks, Acute Recurrent Attacks and Chronic cases. Six cases occur in each class. In the first class the ages ranged between 25 and 46; in the second between 30 and 40; in the third between 24 and 40.

Some of the patients suffered from Trigeminal, some from Cervico Occipital, some from Cervico Brachial Neuralgia, and one in the second class from Sciatica. All the cases in the first two classes were cured; of the third class three were cured, one of the patients having been afflicted 16 years, without a week's freedom from pain.

| Sex. | Age. | Nerves Affected. | Duration of Attack. | Extreme Duration of Treatment. | Complication. | Result. |
|---|---|---|---|---|---|---|
| | | **PRIMARY ACUTE CASES.** | | | | |
| M | 30 | R. Trigeminal. | 4 days. | 4 days. | Catarrh. | Recovery. |
| F | 25 | L. Trigeminal. | 14 days. | 10 days. | Anæmia. | " |
| F | 25 | " " | 21 days. | 24 hours. | None. | " |
| M | 46 | Cervico Occipital. | 12 hours. | 12 hours. | General Derangement. | " |
| F | 28 | L. Trigeminal. | 14 days. | 48 hours. | Lactation. | " |
| F | 25 | " " | 6 days. | 12 days. | Catarrh. | " |
| | | **RECURRENT ACUTE CASES.** | | | | |
| F | 60 | R. Sciatic. | 15 days. | 36 hours. | Decay of Nature. | Recovery. |
| F | 33 | L. Trigeminal. | 5 days. | 6 days. | None. | " |
| F | 32 | " " | 21 days. | 24 hours. | " | " |
| F | 35 | R. Trigeminal. | 10 days. | 4 days. | Lactation. | " |
| F | 30 | " " | 14 days. | 5 days. | Phthisis. | " |
| F | 30 | " " | 7 days. | 48 hours. | Debility. | " |
| | | **CHRONIC CASES.** | | | | |
| F | 28 | {R. & L. Trigeminal.} {Cervico Brachial. } | 18 months. | 5 weeks. | Phthisis. | Relief. |
| F | 24 | R. & L. Trigeminal. | 4 weeks. | 9 days. | " | " |
| M | 35 | {Occipital, R. & L.} {Trigeminal. } | 12 months. | 12 days. | Nervous Debility. | Cure. |
| F | 38 | Cervico Brachial. | 2 months. | 14 days. | Pregnancy. | " |
| F | 26 | R. & L. Trigeminal. | 16 years. | 18 days. | None. | " |
| F | 40 | R. Trigeminal. | 4 months. | 5 days. | " (Decayed Teeth.) | None. |

## PHOSPHORUS AS A NERVE TONIC.

Its use is supported by no less authority than Prof. Delpech, Prof. Fisher, of Berlin, Dr. Eames, (in the *Dublin Journal*,) Dr. Burgess, and Dr. Hammond, of New York. The special treatment indicated in these cases is: 1st. Complete rest of mind, especially abstention from all occupations resembling that upon which the mind has been overworked. 2d. The encouragement of any new hobby or study not in itself painful, which the patient might select: 3d. Tranquility to the senses, which expressly give in these cases incorrect impressions, putting only those objects before them calculated to soothe the mind; 4th. A very nourishing diet, especially of shell fish; 5th. The internal administration of phosphorus in pilular form, prepared by WM. R. WARNER & CO.

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| Ol. Gaultheriæ, | | | |
| Ol. Fœn. Anguillæ, aa | gtt. V. | | |
| Excipient fiat pilula No. C. | Ft. | | |
| **PIL CATHARTIC.** (Cholagogue.) **(Warner & Co.)** | | | |
| ℞ Ext. Colocynthidis, | gr. L. | | |
| Pil. Cathartic., | gr. XXV. | | |
| Ext. Cascarillæ, | gr. XII. | | |
| Ol. Fœn. Anisi, | gr. VI. | | |
| Ol. Fœn. Capsici, | gtt. XII. | | |
| Excipient fiat pilula No. C. | Ft. | | |

*SPECIAL RECIPES MADE WHEN 3,000 OR MORE PILLS ARE ORDERED.*

Entered according to Act of Congress, in the year 1874, by WM. R. WARNER & CO., in the Office of Librarian of Congress.

# Warner & Co.'s Sugar-Coated Pills.

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| | Per 100 | Per 500 |
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**PIL ECCOPROTIC.** **(Warner & Co.)**

℞ Ext. Aloes Soc. gr. CC.
Ext. Jalapa. gr. XX.
Ext. Colocynth gr. XXX.
Ol. Caryophyl. gtt. X.
Syrup Simplex q. s. C. Ft.

**PIL LAXATIVE.** **(Warner & Co.)**

℞ Ext. Aloes Soc. gr. C.
Jalapa gr. XX.
Ext. Colocynth gr. XX.
Ext. Scammon gr. L.
Ol. Caryophyl. Q. S.
Syrup Simplex q. s. C. Ft.

**PIL SEDATIVE.** **(Warner & Co.)**

℞ Ext. Hyoscyam.
Ext. Conium
Ext. Lupulin aa gr. L.
Camphor Pulv. gr. X.
Syrup Simplex q. s. C. Ft.

**PIL TONIC.** **(Warner & Co.)**

℞ Ext. Gentian gr. C.
Ferri gr. L.
Ferri Carb. Saccharat. gr. XXV.
Ext. Nucis Vomicæ gr. V.
Ext. Cinchonæ gr. IV.
Ol. Anisi Caryophyl. gtt. X.
Syrup Simplex q. s. C. Ft.

**PILLS SENT BY MAIL ON RECEIPT OF PRICE.**

Entered according to Act of Congress, in the year 1871, by A. S. Watson & Co., in the Office of the Librarian of Congress, at Washington.

# PURE COD-LIVER OIL.

**Manufactured on the Sea-Shore by HAZARD & CASWELL, from Fresh and Selected Livers.**

The universal demand for an article of Cod-Liver Oil that could be depended upon as *strictly pure and scientifically prepared*, having been long felt by the Medical Profession, we were induced to undertake its manufacture at the *Fishing Stations*, where the fish are brought to land every few hours, and the livers consequently are in great perfection.

This Oil is manufactured *by us* on the sea-shore, with the greatest care, from fresh healthy livers of the Cod only, without the aid of any chemicals, by the simplest possible process and lowest temperature by which the Oil can be separated from the cells of the livers. It is nearly devoid of color, odor and flavor—having a bland, fish-like, and, to most persons, not unpleasant taste. It is so sweet and pure that it can be retained by the stomach when other kinds fail, and patients soon become fond of it.

The secret of making good Cod-Liver Oil lies in the proper application of the proper degree of heat; too much or too little will seriously injure the quality. Great attention to cleanliness is absolutely necessary to produce sweet Cod-Liver Oil. The rancid Oil generally found in market is the product of manufacturers who are careless about these matters.

Prof. Parker, of New York, says: "I have tried almost every other manufacturer's oil, and give yours the decided preference."

Prof. Hayes, State Assayer of Mass., after a full analysis of it, says: "It is the best for foreign or domestic use."

After years of experimenting, the Medical Profession of Europe and America, who have studied the effects of different Cod-Liver Oils, have unanimously decided the light straw-colored Cod-Liver Oil to be far superior to any of the brown Oils.

**The Three Best Tonics of the Pharmacopœia: IRON—PHOSPHORUS—CALISAYA.**

**CASWELL, HAZARD & CO.** also call the attention of the Profession to their preparation of the above estimable Tonics, as combined in their elegant and palatable **Ferro-Phosphorated Elixir of Calisaya Bark,** a combination of the Pyrophosphate of Iron and Calisaya never before attained, in which the nauseous inkiness of the Iron and astringency of the Calisaya are overcome, without any injury to their active tonic principles, and blended into a beautiful amber-colored Cordial, delicious to the taste, and acceptable to the most delicate stomach. This preparation is made directly from the **ROYAL CALISAYA BARK,** not from **ITS ALKALOIDS OR THEIR SALTS**—being unlike other preparations called "Elixir of Calisaya and Iron," which are simply an **Elixir of Quinine and Iron.** Our Elixir can be depended upon as being a true Elixir of Calisaya Bark with Iron. Each dessertspoonful contains seven and a half grains Royal Calisaya Bark, and two grains Pyrophosphate of Iron.

**Ferro-Phosphorated Elixir of Calisaya Bark with Strychnia.** This preparation contains one grain of Strychnia added to each pint of our Ferro-Phosphorated Elixir of Calisaya Bark, greatly intensifying its tonic effect.

**Ferro-Phosphorated Elixir of Calisaya with Bismuth,** containing eight grains Ammonio-Citrate of Bismuth in each tablespoonful of the Ferro-Phosphorated Elixir of Calisaya Bark.

**Elixir Phosphate Iron, Quinine and Strychnia.** Each teaspoonful contains one grain Phosphate Iron, one grain Phosphate Quinine, and one sixty-fourth of a grain of Strychnia.

**Ferro-Phosphorated Elixir of Gentian,** containing one ounce of Gentian, and one hundred and twenty-eight grains Pyrophosphate Iron to the pint, making in each dessertspoonful seven and one-half grains Gentian and two grains Pyrophosphate Iron.

**Elixir Valerianate of Ammonia.** Each teaspoonful contains two grains Valerianate Ammonia.

**Elixir Valerinate of Ammonia and Quinine.** Each teaspoonful contains two grains Valerinate Ammonia and one grain Quinine.

**Ferro-Phosphorated Wine of Wild Cherry Bark.** Ea ch fluid-drachm contains twenty-five grains of the Bark, and two grains of Ferri-Pyrophosphate·

**Wine of Pepsin.** This article is prepared by us from fresh Rennets and pure Sherry Wine.

**Elixir Taraxacum Comp.** Each dessertspoonful contains fifteen grains of Taraxacum.

**Elixir Pepsin, Bismuth and Strychnine.** Each fluid-drachm contains one sixty-fourth of a grain of Strychnine.

**Juniper Tar Soap.** Highly recommended by the celebrated Erasmus Wilson, and has been found very serviceable in chronic eczema and diseases of the skin generally. It is invaluable for chapped hands and roughness of the skin caused by change of temperature. It is man ufactured by ourselves, from the purest materials, and is extensively and successfully prescribed by the most eminent Physicians.

**Iodo-Ferrated Cod-Liver Oil.** This combination holds sixteen grains Iodide of Iron to the ounce of our pure Cod-Liver Oil.

**Cod-Liver Oil, with Iodine, Phosphorus and Bromine.** This combination represents Phosphorus, Bromine, Iodine and Cod-Liver Oil, in a state of permanent combination, containing in each pint: Iodine, eight grains; Bromine, one grain; Phosphorus, one grain; Cod-Liver Oil, one pint.

**Cod-Liver Oil, with Phosphate of Lime.** This is an agreeable emulsion, holding three grains Phosphate of Lime in each tablespoonful.

**Cod-Liver Oil, with Lacto-Phosphate of Lime.**

## CASWELL, HAZARD & CO.,

*DRUGGISTS AND CHEMISTS,*

**NEW YORK.**

# Parke, Davis & Co.,

# Manufacturing Chemists,

## DETROIT,

### MANUFACTURERS OF

**Fluid & Solid Extracts,** | **Elixirs, Wines & Syrups,**
**Sugar Coated Pills,** | **Aqua Ammoniæ,**
**Pure Concentrations,** | **Spirits Nitre Dulc..**
**Chem. Pure Chloroform, Chemicals, &c., &c.**

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**We call special attention to the following articles lately added to our list:**

**Fluid Extract Guarana.**
**Fluid Extract Eucalyptus Globulus.**
**Fluid Extract Bearsfoot,** (from the fresh root.)
**Fluid Extract Calendula.**
**Fluid Extract Chestnut Leaves.**
**Fluid Extract Conium Seed.**
**Fluid Extract Cotton Root Bark,** (from the fresh root.)
**Fluid Extract Gelseminum,** (from the fresh root.)
**Fluid Extract Stavesacre Seed.**
**Pills of Picrate Ammonium.** (Sugar Coated.)
**Brundage's Anti-Constipation Pills.** (Sugar Coated.)

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**Send for dose, descriptive list and circulars, which will be forwarded on application.**

**Physicans who desire our preparations will please specify P., D. & Co. on their prescriptions.**

**Our list of manufactures can be obtained of the following Wholesale Druggists, at manufacturer's rates:**

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|---|---|
| R. Macready & Co., | Cincinnati, O. |
| Kenyon, Potter & Co., | Syracuse, N. Y. |
| Geo. A. Kelly & Co., | Pittsburg, Pa. |
| Benton, Myers & Canfield, | Cleveland, O. |
| Geo. M. Dixon, | Dayton, O. |
| A. Peter & Co., | Louisville, Ky. |
| E. Burnham, Son & Co., | Chicago, Ill. |
| A. A. Mellier, | St. Louis, Mo. |
| Colburn, Birks & Co., | Peoria, Ill. |
| Geo. A. Eddy, | Leavenworth, Kan. |
| Godbe & Co., | Salt Lake City, Utah. |
| Plain, Williams & Co., | Toledo, O. |
| Shrewsbury Bros., | Parkersburg, W. Va. |
| Farrand, Williams & Co., | Detroit, Mich. |
| Swift & Dodds, | Detroit, Mich. |

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Depot in Chicago,

**E. Burnham, Son & Co.**